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ABSTRACT

This monograph includes three papers that discuss ways teachers can respond to new teaching and learning demands. Part 1, "Initial and Continuing Training of Teachers: New Trends and Concepts," examines (a) general principles of the development of teacher education, (b) implications of new trends and concepts for recruiting members of the teaching profession, (c) the crucial period of initial training, (d) various arrangements for inservice training, (e) administrative arrangements for new programs of professional education, and (f) policy implications of various new approaches presented in the paper. Part 2, "New Patterns of Teacher Tasks and Their Implications," focuses on (a) present trends in the distribution of responsibilities for teaching and learning, and (b) types of environment most likely to favor active and effective participation of teachers in educational innovation. Part 3, "Class Size as a Factor of Pupil Performance: A Policy Analysis," discusses a prevalent teacher view concerning the need for class reduction in order to increase efficiency. This paper presents and examines research demonstrating that student achievement is either not related to class size, or is higher with larger classes. Each part includes a section of policy recommendations and conclusions. (JS)

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NEW PATTERNS OF TEACHER EDUCATION AND TASKS

GENERAL ANALYSES

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PREFACE

This volume has been prepared by the Secretariat within the framework of the programme of work of the Education Committee in the field of teacher policies in primary and secondary education.

The Organisation's aim was, first of all, to analyse those changes which affect the teacher's role, within the context of the fundamental transformations which for several years have been influencing the functioning of the educational systems in all Member countries. This first phase of activity led to the publication of The Teacher and Educational Change - A New Role, (1974) which presents a general analysis of the principal conditions necessary if a genuine evolution of teacher functions is to take place in contemporary society. The analysis is based on a number of case-studies of innovations which are included in the publication.

Among the many conditions which would enable the teacher to fulfil the new role which the community expects of him, OECD identified two principal ones:

i) Initial and continuing training of teachers - new trends and concepts;

ii) New patterns of teacher tasks and their implications.

Indeed it became clear, as the general work concerning teachers progressed, that only an active and integrated policy which was decidedly innovative in these areas could provide teachers with the means to respond to new demands in the teaching and learning process and, at the same time, ensure that they were able to participate fully in the design of the various strategies necessary for the successful personality development of their pupils.

Work carried out on this subject, including discussions at meetings of experts, based on a number of case-studies, have led to a series of preliminary conclusions concerning the two principal topics. These conclusions are presented in two summary reports included in this volume; the first report was written by Prof. S.J. Eggleston and the second was prepared by Mrs. A.L. Hyer and Mr. R.M. McClure.

In view of the increasing attention which is being paid to the effect of class size on pupil performance in current discussions on changing teacher tasks and on the creation of educational environments best adapted to the pupils, OECD requested Mr. D. Pidgeon to analyse the results of most relevant and best known academic work on this

subject and to present a synthesis of the findings. This study, which helps to clarify a particularly difficult and controversial problem, is published in the appendix to this volume.

The interest expressed by Member countries in the national case-studies of innovation carried out within the framework of these activities has led the Secretariat to publish the most significant of them in a series of reports under the general title New Patterns of Teacher Education and Tasks.

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GENERAL INTRODUCTION

Experts in many countries repeatedly emphasize the major changes that are occurring in the work of the teacher. These range from clearly visible features, such as his style of teaching and his personal relationships in the classroom, to less visible but equally fundamental matters concerning his relationship with the community outside the school and his colleagues within it, his increasing involvement in such matters as the determination of curricula and even in the definition and evaluation of knowledge itself. He is seen as a major architect in the extension of educational opportunity and in the creation of new structures of educational provision that are more open and more flexible than before. Indeed, a dominant feature of the new role of teachers is the role of innovation; teachers in primary and secondary schools are central to all the most basic innovatory objectives that are envisaged for the various national school systems. Some of these objectives were listed in a recent OECD document(1):

"i) a prolongation of education for all, favouring equality of opportunity and affording a basis for the creation of a genuine system of continuing education;
"ii) modifications in the systems of authority and increased consideration given to the 'parallel school', i.e. the volume of educational activities taking place outside the formal school itself;
"iii) a new distribution of knowledge;
"iv) a more open education than that represented by traditional schooling."

The trend is from "...teaching conceived as the transmission of knowledge to teaching conceived as the organisation of the act and process of learning ... to give greater attention to the social needs of children, all this implying a greater individualisation of education".

In the paper quoted above, it was suggested that attention should be focused on measures which might enable teachers:

"i) to become practically aware of the new responsibilities assigned to them;
"ii) to acquire training suitable to the exercise of these new responsibilities, including their active role in educational change;
"iii) to discharge these more diversified functions effectively;
"iv) and thereby to accede to a more satisfactory status in society, compatible with their new role and functions."

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1) Topics for discussion at the Conference on Teacher Policies (26th-29th November, 1974). To be published in the General Report of the Conference (1975).

Objectives such as these have special implications not only for the role but also for the training and tasks of teachers. In the framework of its activity on teacher policies, the OECD has already published a general report together with a number of case-studies on the changing role of the teacher and its implications.(1) Two other groups of experts were asked to prepare papers reviewing some of the main consequences of this changing role in the areas of:

I. Initial and Continuing Training of Teachers

II. New Patterns of Teacher Tasks.

The two groups of experts met in March 1974 to discuss their views. This book is a summary analysis of those two sets of papers and of the discussions that took place. These two analyses are followed by a substantive annex devoted to the relation between class size and pupil performance.

1) The Teacher and Educational Change: A New Role, General Report, Volume I, OECD, Paris, 1974.

I

INITIAL AND CONTINUING TRAINING OF TEACHERS
NEW TRENDS AND CONCEPTS*

by

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* Summary analysis of discussions and papers at Experts Meeting held at the Château de la Muette, Paris, 28th-29th March, 1974.

INTRODUCTION

This paper is divided into six major sections. The first section presents the general principles of the development of teacher education, on which the experts found themselves in agreement. These are principles that were seen to be relevant to the whole field of new approaches in teacher education. They are brought together not only because they are common to all subsequent sections, but also because they emphasize the remarkable and encouraging degree of unanimity among experts in this field.

This important introductory section is followed by a consideration of the implications of new trends and concepts for the recruitment of members of the teaching profession. A further section explores the crucial period of initial training and this is followed by a section considering the rapidly growing series of arrangements for in-service training. Section five explores the administrative arrangements that may be appropriate for the new programmes of professional education that have been considered and a final section reviews the policy implications of the various new approaches that have been presented and approved.

I. SOME BASIC PRINCIPLES

The various papers prepared in the framework of the OECD activities on the "changing role of the teacher and its implications" and the "new patterns of teacher tasks and their implications" have considered, in detail, fundamental changes in the task of the teacher, ranging from administrative restructuring of timetables and working hours and duties through to the major underlying shifts in the values of teachers and the cultural context in which their work is performed. Taken together the paper describes nothing less than the creation of a new identity for the teacher.

But this new professional identity has fundamental implications for the initial and professional training of teachers and, not surprisingly, the meeting of experts to consider this field drew attention to the widespread changes that were taking place at the various stages of professional training, ranging from admission procedures through to high level in-service programmes.

A picture emerged in which it became clear that strikingly new patterns and strategies of training were taking place in many countries. There was evidence of new recruitment procedures, new structures of qualification, new course contents and new values and ideologies. The picture was at once exciting but also, at first glance, confusing. A bewildering number of new directions seemed to be being followed, sometimes apparently without liaison or consultation. There seemed to be problems of compatibility not only between systems but also within them. Yet, as the meetings continued it became clear that there were factors underlying this apparent diversity that displayed a far greater degree of accord than was at first realised; indeed, the consensus of the experts on many matters was so marked - and so fundamental - that it seemed appropriate to list these areas of agreement at an early stage in this report. For convenience, these areas are presented numerically.

1. It became clear that training itself could be seen as a causal factor of change. It had been frequently assumed in the earlier stages of discussion that change arose from schools or even from the wider community and that the teacher training establishments were doing no more than responding to such change with revised and up-dated courses. But it became clear that in a number, if not most, of the educational systems reported on by the experts, an innovative thrust from the training establishments themselves was in evidence. The papers of virtually all the experts

provide examples of such initiatives and demonstrate their viability. S. Marklund and B. Gran(1) argue strongly for such a state of affairs:

> "It is important, however, not to rest content with a one-sided adjustment, i.e. a state of affairs in which teacher education unilaterally adjusts to the school system. Teacher education as such should prompt and promote measures in the continuing reform of the school system. This is in fact the true meaning of the thesis that education must proceed on a scientific basis."

Overall, it became clear that teacher training, like the teacher's role, is an integral part of a total complex of education change. In this complex a multiplicity of causal factors could be seen and of these the teacher training process itself is a major and, at times, a dominant component.

2. We were early reminded that a change in the teacher's role or responsibility is not only creative but also, in a real sense, destructive: the creation of new tasks, new curricula and new responsibilities must, of necessity, be accompanied by the diminution of some previous activities of the teacher. Some, possibly a considerable amount, of his old working capital is abandoned; often capital that he acquired at considerable cost in an earlier stage in his career. Having realised this, it seemed self-evident that if change is to be facilitated, resources would have to be made available to teachers to help them to rebuild their personal capital to undertake their new roles. Here, the central role of professional training and retraining in the process and facilitation of change became even more apparent. Initial training became visible as a period in which an initial build-up of relevant professional capital could be undertaken - along with the achievement of appropriate skills of adaptability and flexibility that would enable the teacher to use it to the best advantage in changing situations. But, even more important, the concept of in-service training as a process of re-stocking teachers with new working capital became markedly evident. Indeed, a number of experts made it clear that they now saw the development of in-service rather than initial training as having of more fundamental importance in the creation and development of new teacher roles.

3. The experts agreed that, important as it is to emphasize the needs of children in discussions on the development of education, it is at least as important to emphasize the needs of teachers. Because of their central position in all our present educational arrangements, change was only likely to be successful, or even possible, if it was regarded by teachers as being both viable

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1) S. Marklund and B. Gran: "Research and Innovation in Teacher Training" in New Patterns of Teacher Education and Tasks - Country Experience: Sweden, OECD, Paris, 1974.

and worthwhile. Again the work of the professional training agencies in helping to bring about the professional acceptability of change was seen to be paramount. Experts were particularly aware of the real problems of professional identity that teachers experience at times of change. Open-ended approaches, inter-disciplinary curricula, the incorporation of new knowledge of and the modification of subject boundaries, the emphases on work outside the school in the community; all these tend to diminish the "structural protection" of the teacher. Schemes to introduce parents into decision-making in the schools and auxiliaries into the classroom can be fundamentally threatening to a teacher who is only incompletely aware of the raison d'être for such developments. The capacity of teachers to resist change that they believe to be in conflict with their interests is evident in many school systems and the contribution of initial and in-service training to the successful solution of these problems is self-evident. E. Breuse, in his paper(1) on changes in Belgian teacher education makes a number of relevant points:

> "The State education authorities (French-speaking part of the country) have in our opinion adopted an original approach here. They largely concentrated their efforts on changing teacher attitudes. Seminars on the effect of small-group dynamics on the teaching-learning relationship, institutional analysis and seminars on corporal and vocal expression have assembled educational teams which, according to the aims pursued, combined teachers from various types of schools and education, educators, principals, inspectors and those in key positions both in school and administration.
> Apart from the immediate objective, it is undeniable that this change in teacher attitudes has also had the effect of creating a more propitious climate in schools for the reception of young teachers whose initial training with its innovating tendencies was often disparaged by their more conservative seniors. G. De Landsheere had in fact shown in an earlier study that young teachers imitate the older teachers instead of applying the new principles suggested to them in the training colleges."

4. In the light of these discussions there was very considerable emphasis on the need for practising teachers to participate actively in decisions on the development of teacher training and retraining. Indeed, such participation by teachers and by students was seen to be a central feature of new forms of professional training. Here the experts were reminded of the desirability of adopting similar strategies of participation to those that had been found to be desirable in the working of the schools and within agencies for curriculum development and in the various systems. The agreement of the experts here went considerably

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1) E. Breuse: "Experiments in Continuing Teacher Training in Belgium", in New Patterns of Teacher Education and Tasks - Country Experience: Belgium - France - United Kingdom, OECD, Paris, 1974.

beyond endorsing the representative role of teachers on management committees and planning bodies, and also embraced the various strategies currently under development wherein the professional teacher himself played an active part in the professional training programmes of new and beginning teachers. The more relevant models of the teaching hospital, the architect's drawing office or the social worker's consultancy were preferred offering, as they do, the prospect of a more truly professional situation, in contrast to the somewhat remote teacher training establishment staffed largely by those who were no longer practising schoolteachers. Closer liaison between teacher training and the work of the schools offers a yet further prospect of a still more effective participation in educational development by the training process.

5. In the early discussions on change, both of the teacher's role and of the training programmes, it tended to be viewed with uncritical approval and there were even implications that change would be evaluated most favourably if it could be seen to be rapid or widespread. But subsequently it was agreed that an important component of change was stability and that change was more likely to be successful if teachers and their students could progress from relatively stable structures of knowledge, relationships and institutions. It became clear that training strategies, without in any way being conservative or reactionary, were often able to provide a valuable framework of stability on which professional practice and children's learning could develop more effectively. So, at an early stage it was agreed that, paradoxically, it would be appropriate in a paper concerned with new trends and concepts in teacher training to consider stability and structure. The recurrent emphasis on words and phrases such as timing, phasing, the time scale of innovation, gestation periods and the like that occur throughout the experts' papers made it clear that the issue is a fundamental one.

6. The final and perhaps the most predictable area of expert agreement was in the value of research as a tool to more effective development of both teacher training and the teacher's role. A number of experts cited research that had already demonstrated its utility in bringing professional training more fully into harmony with the needs of schools and society. But the experts also agreed that the impact of research, however relevant, was often slight and seldom sufficient, and many examples were offered of the missed opportunities for a more scientifically based professional practice. In the expert's view the importance of research was to be seen not only in its prospect of illumination of the work of the teacher training process but also in its

prospect of illuminating the work of the students in the colleges, both initial and in-service, in a way that will enhance their knowledge and attitudes to the benefit of their future students, particularly those of their future students who will be in some form of special need or special treatment or who will have difficulties in participating fully in educational and cultural opportunities. Indeed, research was seen to be a particularly valuable aid to the broad objectives outlined in the general introduction to this volume.

Underlying all these specific areas of agreement there are, of course, other more fundamental and general areas of expert agreement that will be apparent in subsequent sections. Most fundamental of all perhaps is a general belief that, notwithstanding the difficulties, developments in initial and in-service training can effectively facilitate many of the desired changes in the roles of the teacher and in the development of the various education systems that have been documented so extensively and so valuably in many previous OECD reports: in short, it is our view that teacher education is a central instrument in innovation that has still considerable under-used potential. The sections that now follow on admissions, initial and in-service training and on administrative arrangements, explore this potential in considerable detail. But the sections are not only a record of under-used potential but also of actual achievement and the experts were able to present considerable evidence of existing progress on which to ground their often optimistic predictions.

II. ACCESS TO TEACHER TRAINING

When one examines strategies of access to institutions of teacher training the immediate impression is once again of confusion. In many systems, institutions seem to be acting autonomously, accepting students in accordance with their own arbitrary criteria and with little relationship to the projected occupational needs of teachers or even to the overall demand for teachers in society. But, as with our previous areas of consideration, further and more detailed examination alerts the observer to more coherent fundamental patterns. An important reference point is the existence of established minimum requirements for professional certification in the various systems and such requirements exercise an important control function in that colleges are reluctant to enrol students who appear to be unlikely to satisfy them. Several of the expert papers draw attention to the comparative recency of these established minimum requirements; The Educational Personnel Certification law was only enacted in Japan in 1949 and in the United Kingdom the compulsory professional training

of university graduates became mandatory only in the present decade (and even now there are exemptions from this requirement). R. Goddu, in his paper,(1) writes of the comparative recency of the establishment of regulating bodies to ensure minimum competence in the United States:

> "Certification in the United States is in a period of rapid flux. Performance- or competency-based certification procedures are extensively proposed throughout the United States. The key states in this movement have joined in a consortium to assist each other in the development of this new type of regulation and in convincing other states to join the movement."
> Another force for flux is the Interstate Compact for Certification which develops enabling legislation to... "provide the necessary legal authority for state education agencies to work out procedures that ease the recognition by many states of decisions on educational personnel already made in another state. At the same time, safeguards are provided to assure each participating state that the system will not produce interstate acceptance of substandard educational personnel."

Certainly in the years of dramatic expansion that occurred in most educational systems in the late 1940s and early 50s, teaching was a profession with a very open recruitment policy welcoming all or almost all comers. Training facilities were regularly expanded to meet what appeared to be an ever-growing supply of people who wished to be teachers and an ever-growing demand for their services. More recently expansion has slowed in some countries abruptly and dramatically. By the 1960s demand and supply tended to become stablised and, in consequence, attention could be given to the establishment of further and more precise criteria whereby access could be determined and regulated. These criteria may, simply, be distinguished as quantitative criteria and qualitative criteria.

Not surprisingly, quantitative criteria were found to be somewhat more readily available. But they were not only easier to identify but also administratively more attractive, offering as they did the prospect of immediate economic advantages. But the imposed quantitative limits on access to the teaching profession took a considerable step forward in the 1970s when the prospect of over production of teachers in many developed educational systems became a real one. There are many background reasons for this, not least of them the success achieved by the schools in the 50s and 60s in bringing far more of their students to the point of achieving extended education, thereby creating a pool of educationally qualified entrants to the teaching institutions. Furthermore, the very rapid expansion of the education services that had occurred during the 1950s and 1960s had brought

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1) R. Goddu: "The Changing Relations Between Universities and Other Institutions Involved in the Education and Training of Teachers in North America", in "The Institutions Responsible for Teacher Training: Issues and New Trends in Some European Countries and in North America", Document of the Directorate for Social Affairs, Manpower and Education, OECD, Paris, 1974.

about a growth in the demand for newly qualified entrants to the profession that, of necessity, diminished when the first major objectives of educational expansion had been achieved.

The realities of the situation were expressed in many of the experts' papers. R. Goddu,(1) quoting North American experience wrote:

> "The supply of persons who traditionally seek jobs in teaching is likely to exceed the demand by a million in the first five years of the 1970s.....Much of it is due to projecting past patterns of employment. These patterns were established during a period of brisk demand for teachers during the 1950s and 1960s."

J.M. Atkin and J.D. Raths(2) also write of the dramatically altered supply and demand position for teachers in the United States. In the United Kingdom a recent government White Paper spelled out the figures with even greater emphasis than most other systems. S.J. Eggleston(3) notes that the output of teachers is planned to fall from 45,000 teachers in 1975/76 to about 35,000 in 1980/81. He notes that the calculations are based upon teacher/pupil ratios, staying on rates and, most strikingly, lower birth rate projections. He goes on to say:

> "The critical factor underlying these calculations, however, has been the prediction of the growth of the teaching force. It has been calculated that an appropriate growth may be obtained by a gradually reduced addition to the stock of teachers in the years between 1974 and 1980. The projection of teacher increase ranges from 18,000 in 1974 and falls gradually to 6,000 in 1980."

The British figures have, of course, not been accepted without challenge. The National Union of Teachers, the major British teachers' organisation, commissioned an alternative enquiry into teacher requirements for the next decade and produced somewhat different answers. But more recent evidence suggests that the official figures may not only be more realistic than those suggested by the professional association, but also that they in themselves may be excessive and at the time of writing there is widespread discussion of an even more substantial reduction of numbers of students in teacher training. The main reason for this further downward estimate springs from a decline in the birth rate considerably greater than the predictions on which the original White Paper figures were based.

Reduction in recruitment, coupled with abundance of candidates has, not surprisingly, led to a new enthusiasm to develop qualitative criteria in the various educational systems. There is no shortage of

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1) R. Goddu, op.cit.

2) J.M. Atkin and J.D. Raths: "Changing Patterns of Teacher Education" in New Patterns of Teacher Education and Tasks - Country Experience: United States, OECD, Paris, 1974.

3) S.J. Eggleston: "Innovative Trends in Teacher Training and Retraining in the United Kingdom" in New Patterns of Teacher Education and Tasks - Country Experience: Belgium - France - United Kingdom, op.cit.

criteria whereby qualitative judgments may be made. S. Marklund and B. Gran(1) reported precisely drawn goals for teacher education that have been incorporated into Swedish government legislation:

"The teacher education experts summarised the goals of the new system of teacher education in twelve points:

1. The education must harness or create an interest on the part of the prospective teacher in the individual pupils and their individual development and must deepen that interest in connection with the study of the goals of the school system, the design of courses and the recommended work procedure.
2. The education must harness or create an interest in co-operation with others in connection with the pupils' education, attention being focused on collaboration with their homes, co-operation between the teachers at school and co-operation between different school levels.
3. The education must help to inculcate respect for the human dignity and personality of the pupil and a respect for his right to personal development. This includes an intensification of the teacher's duty to be objective and to provide neutral information on controversial issues concerning attitudes to life and views of society.
4. The education must give psychological insight, with particular emphasis on development psychology, and aimed at inculcating an understanding of the differences between pupils with regard to aptitudes for school work.
5. The education is to provide the requisite knowledge of pedagogics, with particular emphasis on the contemporary history of the school system, the ideology of the reform of the school system, the goals of school work and the corresponding teaching principles.
6. The education must inculcate proficiency in the management of the work procedure recommended for the school system, priority being given to independent activity by the pupils and to the individualisation of school work.
7. The education, which in the case of all teacher categories is to be based on a preceding course of general education corresponding to a complete course of studies at upper secondary school, is to amplify that education, e.g. with reference to the link between school work and social development and the task of school in providing aesthetic education.
8. The education is to be scientifically founded and is to inculcate a scientific and critical attitude to phenomena and problems.
9. The education is to provide the subject knowledge and subject skills required for different subjects and levels.
10. The education is to be planned in such a way as to establish a sense of community between the different teacher groups.
11. Practical teacher training is to be integrated with the teaching of methods and is at the same time to provide a clear illustration of the new work procedure.
12. The education is to form part of the continuing process of educational reform and is to lay the foundations of a willingness and ability to restructure and reappraise the work situation of school, its courses and subject matter, and also to enable the teacher to take part in scientific educational research and development work."

Given the precision of such goals it would at first appear to be a not too difficult task to seek out well motivated students who would be able to respond to them after experiencing an appropriately

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1) S. Marklund and B. Gran, op. cit.

conceived course of training. Yet, even the preliminary discussions of the experts indicated a considerable degree of uncertainty. Should the students recruited be those who would fit in best with these or other prescribed objectives, or should they instead be those who would be more likely to challenge and modify them? Should the students be those who are socially mobile so that they would bring with them a fuller understanding of the backgrounds of the less advantaged children in the school system? But, against this, was there not evidence that those who came from "inferior backgrounds" into teaching tended on average to be more intolerant, arrogant and inflexible than those who approached it from a more secure "middle class" background?

Certainly the evidence of attempts to select teachers on grounds of personality or cultural background is discouraging. S. Marklund and B. Gran(1) reviewing a considerable range of Scandinavian research on teacher suitability write:

> "Scandinavian teacher suitability research, of which it has only been possible here to give an incomplete description, like teacher suitability research, has generally been unable to supply unambiguous answers to the questions concerning the effects of the selection and education of teachers on their subsequent teaching and the effects of the latter on their pupils. A cautious optimism seems to be emerging, however, concerning the possibilities of achieving a systematic knowledge of the effects on the pupils of different kinds of teacher selection and teacher education.
> Up to the end of the sixties, a great number of studies were made regarding teacher characteristics, teacher personality and teacher effectiveness. These investigations represent the first phase of a long line of studies. Efforts were made to find the criteria which define the 'good' teacher. Different methods and materials were employed and different procedures were used. Most of them were based on the assumption that there are teacher characteristics which are generally 'good' and teachers who are generally 'bad' independently of external conditions. It cannot be said that the researchers engaged were very successful."

However, S. Marklund and B. Gran go on to suggest the possibility of more successful strategies in teacher predictability; their conclusions are:

> "There is no simple, unambiguous 'teacher aptitude' existing independently of situational factors. 'Unsuitability' as a teacher seems easier to define. Selection for teacher education should therefore be aimed primarily at avoiding presumptive failures."

In part the problems to which S. Marklund refers are the more fundamental problems of objectivity. J.M. Atkin and J.D. Raths(2) draw attention to this:

> "But not all educational discourse yields to objective analysis. What is lost and what is gained when we move away from a style of decision-making based primarily on judgments of informed practitioners that, however poorly, accommodate many highly impressionistic data and toward procedures that demand

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1) S. Marklund and B. Gran, op. cit.

2) J.M. Atkin and J.D. Raths, op. cit.

objectivity but as a result may focus on events and outcomes that mask controversial philosophical assumptions? This question is paramount but all too frequently ignored."

In the face of such uncertainty it is not surprising that the most common reaction in the various countries was a retreat to the traditional academic thresholds of higher entrance qualifications. S. Takakura(1) writes:

> "Later, when the new education system was in full operation and when the demand and supply of teachers became more or less balanced, there emerged a stronger demand for higher academic competence of teachers in specialised subjects as well as in the advanced general education required for the teaching profession. In 1953, a course approval system was introduced for teacher training in institutions of higher education under which students had to obtain required credits in subject areas through courses approved by the Minister of Education. Two-year teacher training courses were gradually abolished. However, the demand for improvements in teacher training as a whole continued to be ever stronger. The recommendations of the Central Council for Education (1958) and the Council for Teacher Training (1962, 1965, etc.) were successively made public. They contained concrete proposals for (a) the improvement and development of teacher training and a clear definition of the nature and purpose of the teacher training institutions of higher education; (b) the introduction of standards for teacher training programmes. In accordance with these recommendations, all the previous universities of liberal arts (with the exception of Tokyo University of Liberal Arts) and liberal arts faculties of universities were renamed as universities of education and faculties of education during 1966 and 1967 so as to express more adequately their purpose of teacher training and to stimulate its improvement and development."

In the United Kingdom there has been a similar emphasis through the growing minimum requirement of two "A levels" in the examination for the General Certificate of Education taken by school leavers at the age of 18.

There was widespread agreement among the experts that the raising of academic standards was in many ways beneficial for the teaching profession, not least of all because it enabled the teaching profession to establish more strongly its status among the learned professions. Yet there was considerable doubt that academic qualifications alone provide a satisfactory criterion for admission to teacher education. There was a strong and unanimous view that any "external" criteria needed to be reinforced by effective "internal" criteria where the candidate for teacher training "selected himself" as being suitable for the profession.

The experts identified three main areas where this self selection procedure could operate in access to initial training:

1. The successful completion of pre-professional experience. This was seen to be available through a number of agencies, notably

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1) S. Takakura: "Innovative Trends in Teacher Training and Retraining in Japan" in "New Trends in Teacher Education in Canada and Japan", Document of the Directorate for Social Affairs, Manpower and Education, OECD, Paris, 1974.

the Peace Corps and Voluntary Service Overseas, and through work with youth organisations and churches and other bodies. B. Rodhe reported that recent Swedish government proposals now call for experience of working life:

> "At least one year's experience of working life after secondary school is to be laid down as a special requirement for admission to the post-graduate course at colleges of education. This experience can be acquired between upper secondary school and post-secondary studies or later on prior to admission to a college of education."

The process is one wherein the student identifies and reinforces his vocational orientation, a process that continues through professional training and after. For potential teachers, it is seen as a period in which the student's enthusiasm to work with young people, often with backgrounds different from his own, is examined and tested by the candidate himself.

2. The deliberate recruitment of mature students with experience of other adult roles. D.S. Anderson in his report(1) emphasized the positive advantages that may be gained from such a policy, not only in the recruitment of well motivated and experienced students, but also in the opportunity to bring into the teaching profession a range of adult competences not normally available. Experts spoke enthusiastically of the rich rewards such a policy may offer; a particular advantage seemed to be that such students tended to stay longer - usually for a life time - in the profession offering what, for many schools and systems, is a much needed stability of personnel.

   It was emphasized that such students could, and indeed should, be recruited from a wide range of backgrounds; it was neither necessary nor desirable to restrict entry to those of similar professional or social status to existing teachers. On the contrary, there was considerable evidence that craftsmen and other manual workers as well as salesmen, draughtsmen, and many others, could bring a valuable contribution to the teaching force. In a number of countries there was evidence of highly successful shortened courses of initial training for mature entrants.

3. The establishment of pre-training courses wherein a student who aspired to enter the teaching profession might be given the opportunity to take an initial course that had relevance not only for teaching but also for a wide range of other callings, possibly in social work, nursing, librarianship and other vocations. In such a course, through an appropriately structured

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1) D.S. Anderson: New Patterns of Teacher Education and Tasks - The Development of Student-Teachers: A Comparative study of Professional Socialisation, OECD, Paris, 1974.

programme of field experience in schools and in other institutions, the student would have a chance to select himself with the aid of professional guidance. If, as a result of such self selection teaching appeared to be his métier then it would be possible for him to proceed to a final course of specialist training for the profession either directly or after some kind of sandwich experience of professional work. Experts from Sweden and North America described strategies for the introduction of arrangements of this kind. S.J. Eggleston reported on the development of such arrangements in the United Kingdom where the new Diploma in Higher Education is about to be introduced. He writes:(1)

> "Under this arrangement candidates will enter poly-technics and other advanced further education colleges and possibly some universities to take the new two-year higher educational qualification, the Diploma in Higher Education. Towards the end of this course some of those students who wish to become teachers will have the opportunity to follow this Diploma course with a one-year course in education and other subjects which will lead to an ordinary degree in education (the B.Ed.) or a two-year course in education and other subjects leading to the degree of B.Ed. with honours."

The experts agreed that these new arrangements offered attractive new routes for access to the teaching profession, each of them involving for those who wished it a delayed commitment to teaching preceded by an adequate opportunity for self diagnosis. Desirably, all were seen to need considerable professional guidance both before and during the training course in order to help students to relate their personal experiences to the training programme; to be aware of their personal needs and potential contributions. Overall, it was felt that these routes offered not so much a screening device but rather a self selection and evaluative mechanism that was not only better than before but also provided a useful and previously unavailable learning experience for the student. The capacity to evaluate oneself was seen to be of particular relevance for the teacher working in the new open flexible school arrangements where analyses and decisions about the needs of individual children and their work were regularly called for. In such conditions the traditional patterns of supervision of the teacher by head teachers and senior colleagues was of necessity less in evidence and the responsibility of the teacher to assess the situation and act responsibly in it was considerably greater than heretofore. Students who had developed, at an early stage, the capacity to diagnose and respond to a situation were clearly to be preferred to those who had been trained to defer all decisions to seniors. In short, "inner directed" candidates were to be preferred to "other directed" ones.

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1) S.J. Eggleston, op. cit.

The strategies for access to professional training recommended here have fundamental implications for the courses of initial training to which they give entry. Some of the implications for such courses are considered in detail in the next section of this paper.

III. THE INITIAL TRAINING PERIOD

The impression of overwhelming complexity that greeted the experts at the start of their examination of the previous sections was once again in evidence when the variety of emerging initial training strategies was reviewed. Every expert was able to present, in his report, a range of strategies designed to bring about at least some of the important changes in the role of the teacher to which attention has already been drawn. R. Goddu,(1) in a review of the North American situation, tabulated the varying strategies of a wide range of institutions providing initial professional training, whilst B. Ford,(2) in an overview of developments in Germany, Sweden, United Kingdom and Denmark, indicated a wide diversity of initial training strategies provided in the various European countries. Yet, underlying this diversity, it is clear that initial training still seeks to achieve three basic goals:

1. To develop the academic and personal competence of the individual so that, as a teacher, he will be a more knowledgeable and informed person with a more mature set of personal characteristics. In addition to academic programmes there are increasingly programmes designed to assist the student to achieve attitudes conducive to the performance of his work, to assist him with his self-evaluation and motivation and to help him to develop capacities of insight and sensitivity that will be of use to him in the classroom.
2. To provide professional studies that include basic pedagogics involving some knowledge of psychology and usually some understanding of the sociology, philosophy and history of education. In most courses this is now augmented by the study of curriculum development and evaluation, educational technology and the study of management and administrative skills. There is also attention to the methodology of teaching the specific areas of knowledge in which the student has competence.

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1) R. Goddu, op. cit.

2) B. Ford: "Universities and Teachers' Colleges - A Study of Changing Relationships in Some European Countries" in "The Institutions Responsible for Teacher Training: Issues and New Trends in Some European Countries and in North America", op. cit.

3. To provide professional practice wherein the student is given opportunities, with appropriate guidance, to develop practical competence in the day-to-day work of a practising teacher.

There was considerable agreement among the experts not only on the acceptability of this general formulation, but also on the proposition that it is better if all three elements are integrated so that a student develops in all areas at the same time. Each was seen to be mutually interdependent upon the others.

But to agree in this basic way is no more than a prelude to the development of successful and viable initial training programmes and the experts realised that a considerable range of further decisions as called for. It will be convenient to focus their views on this range of further issues by drawing up a list of basic questions to which answers were seen to be necessary.

1. How much should be required of the student in the period of initial training? The general consensus of the experts was that strictly limited objectives should be sought, particularly if the period of initial training is preceded, as has been suggested in the previous section, by some form of pre-training or "life experience" activity that is likely to have reduced the need for extensive attempts to bring about personal maturity during the initial training course. A further argument in favour of limited objectives springs from the widespread plans to introduce in-service training as a regular feature of the teacher's career.

The report by J.M. Atkin and J.D. Raths presented in some detail one major strategy in the development of limited objectives courses; the "competency-based approach" which is in widespread use in the United States. J.M. Atkin and J.D. Raths write:(1)

> "Having a profound influence throughout the United States is the competency-based approach to teacher education (CBTE), also called performance-based teacher education (PBTE). While of course the issues involved are quite complex and to an extent unexamined, the ideas advanced by the advocates of competency-based teacher education have a logic to them that is as compelling as it is beguiling. Teacher educators are urged to identify the effects that teachers should have on students. Then it is necessary to identify the teaching competencies that will facilitate the generation of the desired effects in students.
> "To further illustrate the kinds of performances required of students in competency-based programmes in the United States, we have compiled the following list. The behaviours included in the list may not be representative of all of those found in current programmes; nevertheless, in our view, they do suggest the general spirit of the most popular programmes.
> "...to be able to change tasks in class, modifying planned pupil tasks to fit readiness level of individuals.
> "...to be able to motivate pupil's attending behaviours, providing variety, pleasure, decision, concern and respect.
> "...to be able to explain subject matter to pupils, interpreting terms, meanings, and motives in language that readily communicates to the pupils.

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1) J.M. Atkin and J.D. Raths, op. cit.

"...to be able to acknowledge pupil contributions by responding to answers and suggestions.
"...to bring relevant psychological principles to bear in confronting problems of deviant behaviour.
"...to be able to operate audio-visual equipment, including setting-up, running, repairing, automated instructional equipment.
"...identify in his own written reports on children's behaviour and the reports of others those portions which are inferences or evaluations.
"...describe the characteristics of a small number of broad categories of teacher behaviours in classrooms, and the probable intentions of teachers at the time they exhibit each type of behaviour.
"...when told to produce an example of one of the three categories of teacher behaviour (management or administrative, personal or social instructional or "teaching"), the student will be able to observe a short segment of interaction between a teacher and a pupil, and when the presentation is interrupted, will produce an example of the requested behaviour in either written or oral form.
"...write and justify the appropriateness of statements concerning the affective outcomes of lessons and curricula.
"...translate lesson plans for specified children and subject materials into teaching strategies..."

G. Ferry, though approaching matters from a fundamentally different perspective, nonetheless sets out a strictly limited programme of professional and theoretical activity for students taking an initial course of training in specialist teaching. He writes:(1)

"The aim is sensitisation to the general problems of teaching practices. Activities are practical and theoretical:

- use of techniques for observing school situations (lessons, class councils, use of different methods);
- simulation exercises (marking papers, case studies, role-playing, etc.);
- informative elements from child psychology, psychology of learning, sociology."

The quotation by G. Ferry makes clear that a limited exercise in initial training does not necessarily involve the kind of specific competency check list presented by J.M. Atkin and J.D. Raths.(2) As they point out, there are fundamental challenges to such programmes in the United States, notably in the work of Combs with its emphasis on the promotion of "self development". Writing of Comb's programme, they indicate:

"...the most distinctive aspects of the programme are found mainly in the seminars. A group of thirty students is assigned to a single professor for the duration of the two-year sequence of professional education. The students range from beginners to those who are just about to graduate. As students complete the programme, replacements are added to the group. The thirty students are divided into two sub-groups for discussion purposes. The discussion groups meet two hours a week - often in informal settings such as faculty homes or in students' rooms. To enhance group cohesiveness, all thirty students also meet together once a week and gather together informally on other

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1) G. Ferry: "Experiments in Continuing Teacher Training in France" in New Patterns of Teacher Education and Tasks - Country Experience: Belgium - France - United Kingdom, op. cit.

2) J.M. Atkin and J.D. Raths, op. cit.

occasions during the term. The seminar is the place where, through discussion and exploration, the students discover the personal meaning of the learnings and experiences they are acquiring in other phases of the programme. Individual records are maintained on each student in the seminar. The records include diaries kept by the students describing their experiences and activities in the programme and evaluations of their progress by members of the teacher education faculty. The instructor of the seminar also distributes a weekly newsletter.
While seminar instructors vary in their approaches, all attempt to focus the students on their own self-development. Some use 'standard' exercises that are derivative from the 'human potential' movement. Examples include role-playing exercises and group problem-solving tasks. Students are asked to take strong positions on various issues and share with others their understandings of the origins of their beliefs. Other instructors do not introduce such procedures but merely invite students to share their experiences. As topics are introduced in this informal setting, the instructors engage students in a search for personal meanings."

Yet, however limited and prescribed or open-ended and flexible the initial training programme might be, the experts were agreed that it should create an overwhelming openness in the student in two ways:

a) openness to the development of his own personal competence and to the needs of his students and the communities from which they come;

b) an openness to further opportunities for training both through his daily work in the school and in programmes of in-service training.

In order to achieve these objectives, the experts reaffirmed their view of the desirability of integrated programmes of initial training studies. However, they realised that a programme that was totally integrated and totally open might, for these very reasons, fail to give beginning teachers a sufficient "sharpness" of professional identity to ensure confidence and assurance in the conduct of their role. Indeed, it was argued that the openness of the role that beginning teachers were being trained for may well require of them a heightened sense of professional identity. S. Marklund and B. Gran refer particularly to this problem:(1)

"Teacher education in Sweden has been divided into subject studies, pedagogics, methodology and practical training. If the latter three are fused into a single part we obtain a still rougher division which, with a certain amount of over-simplification, is taken to distinguish between theory and practice. The demand for a greater integration of teacher education presumably reflects a desire for the testing and manifestation of the value of subject studies in the context of practical application. Application then implies enabling the prospective teacher to teach what he himself has learned. Obviously an advanced integration of studies and teaching practice is doomed to failure. The practice of details and parts before the trainee has acquired a sound general view of his subject, of the subject matter involved and of the potentialities or limitations of the latter as a means to the

1) S. Marklund and B. Gran, op. cit.

personal development of the pupils, can easily result in mechanical and rigid teaching behaviour during the practice period. Advanced integration in this sense is also a dubious proposition because the trainee's studies would acquire a short-term objective gauged exclusively according to what was useful for the moment. A constant preoccupation with 'useful' things is liable to result in a fragmentary view of the subject and in a simplification of issues. This in turn not only can lead to a treatment of subject matter which is inadequate for the pupils in the practical situation, i.e. to unfruitful teaching methods, but it also impedes the prospective teacher's own studies."

2. How strong a commitment shall the beginning teacher be given? Problems of inadequate professional commitment are commented upon in the paper by D.S. Anderson,(1) who draws attention to the low level of "professional socialisation" noted among future teachers. Many examples were cited of low levels of professional commitment among teachers in the schools and it is clear that in some of the more difficult areas in the larger educational systems, particularly in the inner city schools, problems of teacher turnover, absenteeism and a general lack of commitment to students are widespread. Here the experts, whilst recognising the difficulties of the problem, were unanimous in their view that commitment springs from the student; it is a consequence of his own self-selection process. At most it was seen that the programme of initial training could facilitate the capacity of the student to identify his commitment and, having found it, to develop it with guidance from the training institutions. It was recognised that this could lead to "wastage" in the training institution but, hopefully, diminished wastage in the schools. The experts looked to a withdrawal from earlier strategies where all students entering training institutions were expected to proceed to a teaching career. However, such changes imply that genuine alternative opportunities should be made available for students following professional courses so that students did not find themselves obliged to remain in teaching for want of alternative employment opportunities. Here the case for multi-technic institutions providing opportunities for transfer to other courses of training became apparent.

3. By what strategies should the initial period of training be conducted? The experts were able to report a wide range of approaches wherein the new characteristics of the role of the teacher were introduced to students. Experimental strategies in the presentation of professional experience include teacher tutor and micro teaching techniques. S.J. Eggleston reports from United Kingdom experience.(2)

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1) D.S. Anderson, op. cit.

2) S.J. Eggleston, op. cit.

"There is a rich variety of teacher tutor schemes all of them aiming to improve communication between schools and training institutions. All involve giving serving teachers special responsibilities for the practice of students in their school or group of schools in a way that brings together teachers, college tutors and students in a working relationship. The 'teacher tutor' can offer day-to-day advice to the student that relates his college work with his teaching in the school in a way that a visiting tutor or a teacher attached to the college seldom can. He may make the arrangements for the college students in his school and share in the assessment of their work. In discussion with students and tutors he can help to resolve some of the inevitable conflicts and free the student from some of the burdens they bring. He may undertake teaching responsibilities at the college, possibly exchanging some duties with a college tutor who may in turn teach his classes in the school. He may even take responsibilities for appropriate students in nearby schools as well. He may be specially appointed to undertake the task with a salary jointly contributed by the Local Education Authority (LEA), college and university. By whatever means he is chosen he is likely to be a teacher whose work is attractive to the college as well as to his colleagues."

Micro teaching is widely regarded as one of the more important developments in the presentation of teaching practice. It "originated" in Stanford University in 1963. In a sense it is a visual and a personal development of the simulation techniques that are used to anticipate problem situations in a number of professional training institutions. The basic principles are simple. A student teacher teaches a short lesson of about five minutes' duration to a small number of pupils. At the end of the lesson the pupils leave and the student discusses the lesson with his supervisor. After a short break the student repeats the lesson with a different group of pupils making use of the feedback from the supervisor to attempt to improve on his basic performance. Usually feedback to the student is enhanced by the use of some assessment instruments such as Stanford Teacher Competence Appraisal Guide. It is a method in which not only the student but also the supervisor can play a considerably more active role.

Many experts have added to the list of innovatory techniques of initial training that have been found to be of particular use in the development of new competencies. These include simulation exercises, role playing games, new observation techniques and studies of classroom interaction, including the use of behaviour analyses as indicated by G. Ferry(1). S. Takakura(2) writes of the plans to introduce the educational technology centre as an important tool in the development of Japanese initial training:

"In regard to teaching methods and techniques, mention should be made of the Educational Technology Centre. The recommendation of the Council for Teacher Training (1972) proposed

1) G. Ferry, op. cit.

2) S. Takakura, op. cit.

a substantial improvement in the objectives, duration and methods of student teaching practice. In particular, it emphasized the need for improvement of methods. While the traditional programme is merely intended to give the student first-hand experience in teaching and class operation by placing him in schools attached to universities or in designated co-operating schools, attempts should be made to improve the method for teaching practice through, for instance, the use of modern educational equipment such as video-tape recorders and closed circuit television during the period of teaching practice."

4. In which context shall initial training take place? The experts were agreed that whatever the context in which training occurred it was important that practising teachers, at various levels including recently trained teachers, should play an active participatory role in the work of initial training. Teacher tutor schemes were seen as one way of ensuring this but other, more radical, strategies such as that explored by B. Ford(1) involve the transfer of substantial parts of the initial training programme to a school-based location. G.L. McDiarmid,(2) in a report on developments in Canada, drew attention to the possibility of at least parts of the initial programme taking place in specialised locations of particular relevance to planned new developments in educational provision. Here, following government policies to increase opportunities for health and outdoor education, experience of outdoor education programmes came to form a part of initial teacher education at the University of Saskatchewan:

> "The programme started in 1968 with one class designated as 'foundations of outdoor education' which students in their second year could attend. In this course, which continues, the general nature of and opportunities for personal, social and physical development of participants are investigated. The relationships between nutrition, attitudes and fitness are studied and the many kinds of activities and related equipment for comfortable and healthy engagement in outdoor education are surveyed. Brief excursions by teacher educators and students are made, sometimes in conjunction with teachers and pupils from the Regina school system."

Elsewhere in his report G.L. McDiarmid reports strategies of a different kind to regulate the area in which initial training takes place. He describes the situation at York University, Canada, where students only undertake their period of professional practice in innovatory schools. This is a remarkably radical departure in that most training establishments however innovatory in their approaches find it necessary to place their students in a range of schools at different stages of innovation and hence find that some of their

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1) B. Ford, op. cit.

2) G.L. McDiarmid: "General Trends in Canadian Teacher Education with Selected Case Studies of Innovative Ventures" in: "New Trends in Teacher Education in Canada and Japan", op. cit.

students are forced to compromise between the conflicting approaches of the training institutions and the schools. But in present conditions of limited numbers of innovatory schools in most systems, such a strategy could only be applied with very restricted numbers of students or else by an intensive use of a limited number of schools that may well be professionally intolerable. It is also arguable whether such a strategy is in the best interests of the diversification of innovatory techniques since students may well find difficulty in adjusting to the normal school system (the "regular schools") if they had no experience of it during their period of professional training. The experts were in broad agreement that a desirable outcome of the initial training experience was a confidence in new approaches that could be both defended and applied in ordinary schools. This was not to suggest that the beginning teachers should be able to effect the change from non-innovatory schools into innovatory schools; rather that they should be alive to ways in which they might join in this task, reinforced by in-service programmes and the steady arrival of further like-minded colleagues from the training institutions.

In addition to the programmes cited by G.L. McDiarmid, the experts also indicated other areas with advantageous locations for initial training as well as in-service training. These include the various educational priority, head-start and other anti-deprivation programmes, schools for native and immigrant populations and areas of special educational provision that are to be found in the various educational systems.

But the experts were also concerned with the overall location of the teacher training course within the context of tertiary education. This matter will be considered more fully in the sections dealing with administrative arrangements, as will the more general problems of the location of the teacher training establishment within the context of educational systems generally. Meanwhile, however, we must now turn to the area of in-service education which has even more direct implications for the considerations that have been under review in this section.

IV. FURTHER PROFESSIONAL TRAINING

The preceding section reported the experts' views on appropriate forms of initial training for the new roles of teachers. But, as the OECD summary report of the expert work on the changing role of the teacher and its implications(1) has emphasized, the role of the teacher is just not a changed one but a changing one. It is for this

1) Published in The Teacher and Educational Change: A New Role, op. cit.

reason that an important component of initial training was seen to be the achievement of adaptability and capacity to change. But if change is to be continuing and teachers are to use their adaptability to respond fully to it, continued opportunity for training and retraining must be available throughout their careers. This was seen to be "a self evident truth" by all the experts. G. Ferry makes the point simply and directly:(1)

> "The continuing training of teachers is a necessity recognised and proclaimed in France by all those who have analysed the current development of the educational system. In 1968, the Amiens symposium demonstrated that no educational reform was conceivable without some kind of continuing training to make teachers capable of taking on new tasks devolving on them in a society in constant evolution."

S. Takakura,(2) in his report on the Japanese situation, reinforces this point of view and goes on to emphasize the ways in which in-service training must be fully integrated with initial training:

> "In the present, rapidly changing society with advanced technological innovations and increased flow of information, knowledge and technology are progressing at a fast pace. Theories and knowledge regarding the teaching-learning process are also constantly evolving. Amidst such realities, there developed an ever stronger idea that teachers should continue their life-long education in their specialised profession so as to promote and assist effectively the all-round growth and development of children. This attempt to integrate the whole process of teacher training and retraining is inseparably related to the recent concept of the teaching profession."

The experts emphasized repeatedly the wide-ranging activities embraced in existing and prospective in-service educational programmes. One list among many was offered by E. Breuse:(3)

> "For primary education
>
> - organisation of conferences for groups of some 40 to 100 primary school teachers in each case. These conferences are all on a particular theme, prepared in advance and participants are sent a questionnaire that serves as a basis for discussion: the aim is thus to 'pool the research, ideas and experience of teaching staff';
> - introductory courses, e.g. an introductory course in audio-visual methods in the primary school, organised by the Institut des Arts de Diffusion (Institute of the Arts of Dissemination);
> - monthly pedagogical meetings held in all primary schools under the authority of the head teacher.
>
> For secondary education
>
> - regional 'animation' by teams of secondary school teachers working in groups and pooling their teaching experience;
> - retraining in classical languages organised by the University of Louvain;
> - sessions on computer science organised by the ICHEC (Institut catholique des hautes etudes commerciales);

1) G. Ferry, op. cit.

2) S. Takakura, op. cit.

3) E. Breuse, op. cit.

- creation of regional bodies for contacts and exchanges between research workers and teachers at secondary and higher levels, etc."

In the discussions about in-service education, it was found convenient to focus on two somewhat distinct stages: those appropriate to the first year of teaching (the probationary year) and those appropriate to subsequent years (post-probationary).

1. The Probationary Year

This was seen essentially as offering a chance to ensure that the ideas presented to the teacher in his initial training could be put into practice in his professional work. It was seen as a process of advanced induction into a full-time professional role with parallels to the internship programme of hospitals. It was seen to be a year of transition in which often the teacher would enjoy a somewhat diminished teaching timetable in order to have time for further study and discussion as a prelude to final recognition of his qualified status at the end of the probation period. The United Kingdom has recently introduced detailed proposals for the more effective use of the probationary year as part of a wide ranging programme of developments for in-service training; S.J. Eggleston reports:(1)

> "On the probationary year, it was considered that teachers should experience the kind of help and support needed to make the induction process both more effective and less daunting than it had often been in the past. It was therefore considered that they should be released for not less than one-fifth of their time for in-service training. For the remainder of the time they should be serving in the schools but with a somewhat lightened timetable so that altogether they might be expected to undertake three quarters of a full teaching load. Alongside this provision the government has agreed that professional tutors should exist in the schools supernumary to existing staffs and that also a network of professional centres should be established based on existing training institutions and teachers' centres.
> The changes in the probationary year bring about a further change in that they involve far more fully than heretofore the participation of practising teachers in the induction of new colleagues."

As in the United Kingdom so in Japan there has been consideration of the links between probation and the award of full professional qualification. S. Takakura(2) reports proposals for students from the teacher training institutions:

> "After completing the two-year course, the graduates would serve in schools as probationers for the period of one year and obtain the qualification for regular teachers if they successfully passed a prescribed examination."

For those who have completed a university course they would be:

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1) S.J. Eggleston, op. cit.

2) S. Takakura, op. cit.

"...employed as probationary teachers for a prescribed period and given guidance and training in matters essential for teachers: the teachers certificate would be conferred on those who completed the probation term and successfully passed a final examination. Under this system, those who already possess the required credits in teacher training courses of the university would do a six-month probation period while those who do not would be required to undertake a period of training equivalent to the teacher training courses before starting on their six months' probation."

2. Post-Probationary Periods

Here the experts were concerned with a broad perspective of in-service activities not only for ordinary teachers but also for head-teachers, advisers, inspectors and administrators, as the papers by E. Breuse and G. Ferry indicated. Throughout the systems represented in the discussions there was widespread and impressive evidence of initiatives not only in the content but also in the presentation and evaluation of work with experienced professional personnel. In particular effective use is being made of the strategies developed in management training in industry - notably in the development of group dynamic approaches. In reviewing the reported strategies, it became clear that they fell conveniently into three groups, all of them endeavouring to add further knowledge and understanding to existing experience:

a) Activities designed to further the personal development of experienced teachers that can help them to respond more fully to new needs and new relationships, to achieve the heightened sensitivity needed to work with minority groups or with "culturally handicapped" students; to make the difficult personal adjustments to open systems of teaching, individualised learning programmes and other radical departures from the tradition in which they may have been practising initially. Such activities may also be of considerable value in reinforcing or even re-establishing the necessary sense of professional identity - the self image - without which the teacher's very presence in the classroom becomes difficult if not impossible. E. Breuse(1) refers to such attempts to develop teachers' attitudes:

"This approach, i.e. changing teachers' attitudes, was firmly adopted by the Department of Further Training for teachers and educators of the Organisation of Studies (Ministry of Education and French Culture). A Seminar held in October 1971 for all French-speaking State secondary school inspectors had moreover recommended among other things long residential courses for pupils, teachers, principals and inspectors with a view to changing teachers' attitudes. Hence the experiment of using group dynamics with a view to the psychological preparation of members of the teaching profession for the many changes they have to face, especially in reformed education."

1) E. Breuse, op. cit.

Central to the development of attitudes is the question of relationships. As G. Ferry(1) reminds us in his account of the FOEVEN arrangements:

> "to reconsider their personal attitudes towards other people, to become aware of certain determining factors in their behaviour and of the reactions these arouse in others..."

b) Courses to enhance professional performance or to initiate new professional capacity. These courses, which form the core of most existing in-service arrangements, include a range of activities that begin with the up-dating and enhancement of basic techniques that, for various reasons, may be in need of review. An interesting example of this basic but often necessary level is to be found in J.M. Atkin and J.D. Raths(2) account of the mini-courses on questioning techniques:

> "Mini-course I of the Far West Laboratory is designed to improve the questioning techniques of teachers. The first sequence instructs teachers to ask a question, to pause at least five seconds, and then to call upon a student for a response. Teachers are urged to be accepting of student responses and to call upon both volunteers and non-volunteers to keep students alert. The second sequence in the mini-course demonstrates how teachers can ask questions that require longer pupil responses. Teachers are shown how to ask questions that require students to use higher cognitive processes, and how to redirect the same question to a number of different students to decrease the amount of teacher participation and increase pupil involvement in the discussion. A third sequence in this mini-course is designed to improve the 'probing' techniques of teachers. Teachers are shown how to prompt students, how to clarify students' views, and how to refocus students' responses. The final sequence demonstrates teacher behaviours that might impede the flow of discussion in a class. Such behaviours as repeating the questions and/or repeating students' answers are demonstrated to illustrate the deleterious effects they have on the pattern of discussion in the classroom."

From here the range extends to the consideration of the curriculum; how new knowledge may be introduced, whether in existing subject divisions or in new integrated subject groupings. In many in-service courses, teachers are concerned with nothing less than participating in the fundamental redefinitions of knowledge. In such cases there is a remarkable enhancement of the professional standing of the teacher, and in-service training, simply by providing a framework in which professional activity of this kind can take place, was seen to be of great value to the profession in its search for status. But in-service training is not only concerned with the identification or re-identification of knowledge and its structures, but also with the ways in which knowledge may be presented and made available.

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1) G. Ferry, op. cit.

2) J.M. Atkin and J.D. Raths, op. cit.

And, as S. Marklund, B. Gran and G.L. McDiarmid reminded us, a corollary of development work in the curriculum is the task of evaluation. This is a component of many in-service programmes and one that follows directly from the attempts to make teacher self assessment an important feature of initial training courses. In addition to the specialist work in curriculum there is also the wide ranging task of introducing educational technology as a whole; informing teachers of the use of new visual and audio aids and of the other new resources available to them. An important feature of many in-service courses has been the attempt to help teachers to establish better use of resource material collections available in the schools, or to build up their own resources for the particular programmes in which they teach. The gathering of resources takes on a particular importance in systems of individualised learning where pupils themselves require ready access to resource materials if they are to work at their own pace and level. In Britain particular emphases have been placed upon the establishment of resource centres serving individual schools or groups of schools. They are frequently housed in teachers' centres (to which reference is made later in this section).

Still further groups of in-service programmes are those which present teachers with knowledge that may not have been available or even in existence at the time of their initial training. Commonly such areas are in the sciences as R. Goddu reminds us. But they are not only to be found there; G. Ferry(1) draws attention to the teacher assignments in economic environments that are forming a part of in-service provision offered to secondary teachers in several French locations.

c) The third area of mainstream in-service training concerns institutional development, the ways in which the teacher or head is helped to respond to existing and new problems in the running and maintenance of the school or college in which he serves. Here we are concerned with management skills. It is clear that the management requirements of running a flexible, open-structured organisation in which the participants, both staff and students, have an increasing voice in the decisions affecting their work, is a different and generally more difficult task than the running of a hierarchically organised, centrally controlled "authoritarian" establishment. When, to this is added the prospect of work that takes place outside the boundaries of the school or college, and also the growing demands of the local

1) G. Ferry, op. cit.

community to participate in the decision making of the institution, it becomes clear that management calls for continuing consideration and appropriately forms an important part of in-service provision. A central problem is the issue of professional autonomy and G. Ferry(1) expounds one of the objectives of such a course:

> "by listening carefully to the participants, to attempt to determine current teaching needs, to forecast future ones, to prepare for the pedagogical autonomy of first-level establishments and their integration into community life;..."

Popular ways of handling such issues in in-service training are seen to be through the provision of "simulation" and "in-tray" courses. Here the member of the in-service course is presented with simulations of the various documents that might be found in his "in-tray" in a day's work. These could range from requests for course changes by students through to complaints by aggrieved parents; new governmental requirements; resignations of senior members of staff; reports of examination results; disputes between school technical and maintenance staff; and complaints about the behaviour of students on the public transport services. The candidate would be expected to respond to these situations, given the necessary background information, in the same kind of time schedule as a real life administrator of a school. His solutions would be discussed by his fellow class members and also by the experienced administrators and counsellors who were running the course. As in most in-service programmes, the aim would not be to suggest right answers but rather to explore the range of possible answers to problems and their implications.

In addition to wide ranging activities of this kind there were, of course, many examples of attempts to provide courses dealing with specific problems, for instance, the introduction of auxiliaries in schools and how this may be done with maximum advantage to the children and the teachers taking full account of the difficult problems of professional relationships and professional status and responsibility that are raised.

In all programmes concerned with institutional problems, it was seen that there should be a conscious attempt to present the ways in which the institutional considerations are viewed by the least as well as the most powerful members of the institution and also how they are viewed by those outside the organisation. It was also agreed that, though the unique features of institutional problems in education called for considerable attention, the similarity of the problems of education with those of other diverse and complex institutions in industry and the public

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1) G. Ferry, op. cit.

service should be remembered, as often solutions may conveniently arise from comparative analyses.

3. The Organisation of In-Service Education

As with provision so with organisation there is a wide range of strategies. At its simplest level it may become a process whereby advisers just "drop in". J.M. Atkin and J.D. Raths(1) quote the responses of experienced teachers to such arrangements:

> "She'll come in to the room - look around - and maybe discuss things with me for a few minutes. Then she'll sit down and work with some children, and she'll talk in a very loud voice so I can hear without having to stop what I'm doing. I literally learned how to talk and work with children in new ways listening to her."
> (The Advisor)..."goes in and starts fiddling around with something and have a group of kids interested - and I wouldn't know enough to start fiddling around it in the first place. I feel he can add something that I can't to my classroom."

The use of the vacation course is again of long standing, often linked, as in North America, with the gaining of credits to be used in enhancing salary or qualifications. But the provision of vacation courses may be augmented by "releasing" teachers during the time when their schools or colleges are in session. S. Marklund and B. Gran(2) write of the "study days" that are available to Swedish teachers in which obligatory in-service activities take place:

> "Since 1964 all Swedish teachers have five so-called study days during the school year. This type of in-service training is obligatory. It is used mostly for planning conferences in the local schools."

G. Ferry(3) describes two strategies whereby primary teachers may be released for in-service training:

- "three-month courses, during the term when student teachers from the college of education are doing their teaching practice, thereby releasing a number of teachers from their classes;
- six-week courses during which the teacher's place is taken by a substitute teacher."

Other systems, notably in the United Kingdom, are moving to a position where teachers like university professors, have sabbatical leave at appropriate intervals as a professional right.

Yet along with these moves to institutionalise and structure in-service education - essential moves if an adequate range of provisions is to exist - there was also the realisation that if it is to be compatible with the views on openness and flexibility that now characterise most of our educational arrangements, in-service training too must be available freely and informally. Here the teachers'

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1) J.M. Atkin and J.D. Raths, op. cit.

2) S. Marklund and B. Gran, op. cit.

3) G. Ferry, op. cit.

centres provide one of the most interesting administrative arrangements; permanently staffed and available - local centres provide in-service opportunities of a formal and informal nature along with a range of professional, personal and even social facilities to meet the needs of all teachers in that area. J.M. Atkin and J.D. Raths(1) draw attention to the widespread development of such centres in the United States:

> "Whether a particular programme of in-service education is established to convey skills to practitioners, or whether it is intended to promote autonomy and a sense of growth, it is very likely in the early 1970s to be housed in a facility called a 'teacher education centre'. Centres have proliferated in the United States over the past seven or eight years. At present, they exhibit many different patterns and serve several different objectives."

S.J. Eggleston(2) describes the very full development of the teacher centre movement in the United Kingdom:

> "The teachers' centres are probably one of the major innovations in professional education to have taken place in England and Wales in recent years. There are now some 650 teachers' centres in England and Wales. Renamed Professional Centres by the White Paper, they provide a localised source of information and guidance for all teachers in their catchment area. Characteristically each centre is administered by an experienced teacher acting as warden or leader who is able to make available to teachers a range of courses that respond to their professional needs. There is also a resources centre storing not only books but a wide range of other media that may be borrowed for use in school classrooms or staff rooms. There is normally a range of audio visual equipment for borrowing and which augments equipment in the schools. Office facilities are available and occasionally secretarial facilities too. Many centres have technical staff available to guide teachers in the preparation of transparencies, slides and other audio-visual material. There is normally a common room and refreshment facilities. In many local authority areas the teachers' centre seems to be the nucleus of new developments in the curriculum and methodology of teaching in their areas and the liaison with the Local Education Authority (LEA) advisory staff is a very close one. In some larger authorities there are also specialist teachers' centres notably in the sciences and design areas. The majority of teachers' centres have developed in old school buildings extensively refurbished. Often the laboratory, craft and art facilities of the schools have been retained and adapted for use by teachers as 'teachers' workshops'."

4. In-Service or Initial Education: Which is the Greater Priority?

This section will have left readers in no doubt about the importance of in-service activities. But is the provision of in-service training an even greater priority than the provision of new forms of initial training? This is not a question on which the experts achieved a unanimous answer, possibly because it is a question that is incorrectly formulated. For it is clear that the kind of in-service activities that have been described can only become fully

1) J.M. Atkin and J.D. Raths, op. cit.

2) S.J. Eggleston, op. cit.

effective if they have been preceded by the kind of initial training that has been described in an earlier section with its emphasis not only on new approaches but also a capacity for change and flexibility. But once such initial training is established it is undeniable that its subsequent effectiveness is critically determined by the existence of appropriate in-service programmes. The point is made very clearly by J.L. McDiarmid(1) in his case study of the native education programmes at Brandon University in Manitoba. Overall it is clear that initial training and in-service programmes are complementary. But if they are properly seen together then it may happen that there are valuable economies that may arise. E. Breuse(2) presents an interesting suggestion that the availability of adequate in-service training may lead to a possible reduction of the amount of initial training:

> "Insofar as the continuing training at present being worked out can define its aims, methods and evaluation techniques and set up the essential infrastructure, it will inevitably have repercussions on the length, content, methods and evaluation of initial training. It is already certain that the longer initial training demanded by some people is not inevitable."

Though the appropriateness of such a suggestion depends on many factors and cannot be seen as a general recommendation, it serves to emphasize the eventual importance of considering initial and in-service training schemes jointly rather than separately.

V. INSTITUTIONAL RESPONSIBILITIES FOR TEACHER TRAINING

In the preceding sections the important institutional arrangements of professional training have been cited on a number of occasions. In this section we return more directly to the important questions of who selects, who trains and who evaluates professional education. In short we shall look at the power structure of teacher education. It will be convenient to do this by reference to the main participants in this structure.

1. Government

The experts were unanimous that governmental initiatives were not only increasingly important in teacher education and re-education but also increasingly necessary. In all systems it was clear that only at governmental level could the necessary global decision making take place on such fundamental matters as the size of the teaching force and hence the numbers to be admitted to training institutions. It was also clear that decision making on a governmental level was

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1) J.L. McDiarmid, op. cit.

2) E. Breuse, op. cit.

called for in major developments of the education systems such as the enhanced provision for disadvantaged groups, or raising of the school leaving ages and that the scale of provision of in-service education must, in part, be a reflection of such decisions. Experts from Japan, Sweden, Belgium, France, the United Kingdom and North America presented considerable evidence of the increasing scale and also desirability of government intervention and responsibility. In these countries too there was, as we have seen, considerable development of governmental participation in public bodies designed to establish minimum standards of professional training such as the Japanese Council for Teacher Training and the United States' Interstate Compact for Certification. Through bodies such as these, governmental initiatives play a major direct or indirect role in the development of courses at in-service and initial training level. But in order to consider how the process of training itself is institutionalised we must turn to two other partners in the power structure - the universities and the training institutions.

2. The Universities

The universities are a central agency in attempts to develop and integrate teacher education. Along with governmental policies they play a major part in affairs as S. Takakura(1) notes:

> "The attempt to innovate an integration of teacher training and retraining in order to establish the professionalism of the teaching profession necessarily requires a clarification of the nature and purpose of teacher training institutions... Attempts to clarify the purpose and nature of such institutions are now under way through the process of interaction between the administrative guidance of the Ministry of Education and the universities concerned."

Certainly in North America and increasingly in Europe the universities have become responsible for the validation of virtually all professional education and for the provision of a substantial number of the programmes that lead to qualification. Yet despite the commanding position they have achieved, universities have often shown considerable disfavour towards the pedagogical aspect of professional training and where they have undertaken such training they have, as B. Ford and other experts have noted, tended to allocate it to a subsequent rather than a concurrent role in university studies and also to have relegated such studies to a place of secondary importance. The experts were unanimous that if at any time such relegation was justified it is certainly not the case at the present when education is seen to be a dynamic process with important and immediate consequences for the economy and the culture of advanced societies. And, as B. Ford(2) points out in a quotation from Olson there are valid

1) S. Takakura, op. cit.

2) B. Ford, op. cit.

academic reasons for the reappraisal of the academic status of professional training:

> "An elementary teacher teaching in a self-enclosed classroom, a middle school teacher teaching either a general or a specialised area, an early childhood teacher with his Dienes rods needs to know a great deal about the fundamentals of mathematics and the fundamental properties of matter; he needs to know about linguistics, dialects, and language acquisition; he needs to know anthropology, sociology, and the way in which the human group operates; he needs to know the fields of learning and behaviour. And he needs to be able to apply the insights of these fields to the teaching of reading for instance."

The experts noted hopeful signs of a gradual reappraisal of the universities' position on educational studies and drew attention to the growing number of programmes of educational study that formed a component of undergraduate degrees and their increasing popularity with students who may not themselves wish to become teachers. The growing interest in and effectiveness of educational research, particularly applied educational research, based in universities was also noted. Yet it is still clear that training institutions still exist in comparative isolation enjoying validation but only infrequent academic partnership with universities.

3. Training Institutions

Experts expressed considerable doubt about the continuing viability of the isolated teacher training institution. The problems of such institutions are widely reported, as in B. Ford:(1)

> "...change is impeded by the fact that teacher-education institutions in all three societies seem to have partially insulated themselves from their social contexts and often from the active experimentation that occurs in the schools. In this sense the challenge that has been felt within many organisations to update information, to question traditional assumptions, to consider new methods of working and possible new structures and relationships, is not being met and in some cases may not even be generally recognised. It is the schools rather than the training institutions that are confronting and grappling with the problems of minorities, environmental disadvantage and poor motivation."

Yet the solution is by no means an easy one as B. Ford goes on to indicate:

> "The moral is clear enough. If teachers' colleges are to move fully into the area of higher education, they must either be very considerably expanded - only some of the German colleges of about 2,000 are of a size to be independent and academically self-sufficient; or they must enter into relationship with some other institution(s), with which and through which they can augment their own intellectual resources."

There is also criticism of the "monotechnical" nature of the colleges in that as their students can only become teachers and can only meet teachers and potential teachers, the isolated college gives

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1) B. Ford, op. cit.

birth to an isolated profession. Moreover, such arrangements are seen to "railroad" students into teaching as opposed to the multi-technic college in which alternative courses could be followed by those who found they did not wish to teach or found themselves unsuitable for teaching. The discussion produced ample evidence of such problems.

As a result of the widespread criticism of the existing training institutions, the experts supported moves to diversify them and integrate them with other institutions in a way that matched the openness and flexibility they supported in other sectors of the education system. In the United Kingdom, apart from a very limited number of mergers with universities, official policy was to encourage the colleges of education to establish new liaisons outside the university sector, a possibility that arose from the creation of the binary system of higher education in the United Kingdom with both a university and a non-university sector. It is important to remember, in considering the binary system of the United Kingdom, that the non-university sector, like the universities, now has independent validation arrangements for degrees and other academic awards through the Council for National Academic Awards (CNAA). As a consequence of the existence of this independent system it has become possible to see the emergence of two main strategies for linking teacher training establishments:

a) The integrated model of the Gesamthochschule which also appears to propose the disappearance of the independent college through its absorption into the large university structure. But in this case the argument is not that the college will supply something which the other institution lacks, as the polytechnics may lack a humanities department, but that the university will supply something which the college lacks: large specialist departments, a "scientific" basis of study, and a considerable volume of research. These arguments are at least related to some of the obvious needs of the colleges, even though in Germany the colleges are comparatively large. Whether taking over the colleges in this fashion will supply these needs or simply obliterate them is the still open question.

b) The proposals of U68 which are under discussion in Sweden seem at times, under certain conditions, to be even more radical than the integrated Gesamthochschule, in that it is suggested that both universities and colleges, as such, will cease to exist and will give way to a single realm of higher education. The creation of 19 higher education areas organised around 6 major institutions of higher education may well, on paper at least, implement this basic concept. In another light, however, the retention of subject departments, with their strong base in the universities, and the sub-division of higher education into

occupational training sectors, one of them being teaching, with its strong base in the teachers' colleges, suggests that, to all intents and purposes, the universities and colleges will continue to exist, though obviously under joint planning and directing agencies, and out in the smaller areas, they may well be virtually integrated.

An important feature of such strategies which was widely endorsed by the experts was the elimination not only of the academic isolation but also the occupational isolation. As S. Marklund and B. Gran(1) note, this change may not only have personal consequences for the student of the training institution but also important consequences for the nature of schools themselves:

> "In recent years, however, a new question of integration has arisen and has been closely debated, viz the co-ordination of teacher education and other kinds of education, e.g. for technologists, economists and public servants. According to these new requirements a prospective teacher of mathematics or languages should study his subject together with students with other ambitions than the teaching profession. It is claimed that the co-ordination of teacher education with other education within the same or adjoining subject spheres would be conducive to a subsequent co-ordination of education, vocational activity and leisure activity, which in turn would help to de-institutionalise school."

But if we are moving towards integrated initial professional training establishments it is important to notice that there are already signs that in-service education is proceeding along mono-technic lines.

The preceding section outlining strategies of in-service education may well be seen as making a compelling case for highly specialised agencies in this field, although the experts considered that, in certain circumstances, there may well be a case here too for the establishment of multi-technic institutions of advanced professional education, particularly in areas such as management training and personnel management, where educational institutions can be seen to be experiencing similar problems to those of industry and the major public services.

4. The Teaching Profession

There was evidence from all countries that teachers themselves at all levels were coming to play a growing part in the power structure of professional training. This ranged from the informal arrangements whereby local teachers participated in drawing up the programme of activities in their local teachers' centre and, through teachers' workshops, shared in their own and their colleagues' in-service training; the somewhat more formal ways in which teachers, teacher

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1) S. Marklund and B. Gran, op. cit.

tutors or professional tutors came to play a major part in initial training and probationary year programmes, and at the other end of the scale, the formal but unmistakably effective way in which teachers either individually or as members of their professional organisations, took a major part in the national and regional planning and validation bodies - governmental, university and independent. The experts wholly endorsed these strategies, encouraged not only by their desirability in the context of the educational arrangements appropriate for democratic societies, but also for the important practical reason that there was considerable evidence of their viability and effectiveness.

5. The Community

Increasingly experts saw community participation as itself being an important part of the decision making structure of professional education; and evidence of participation by parents, students, employers and other interested parties in the in-service and initial training arrangements was seen to be not only possible but, like professional participation itself, highly desirable. R. Goddu(1) draws attention to such participation:

> "By investing its discretionary funds in activities such as the Teacher Corps, the Career Opportunities Programme (COP), the Training of Trainers of Teachers programme (TTT), and emerging efforts in Performance Based Teacher Education (PBTE), the federal government has opened the door to new direct influences on teacher education by the community and the public schools."

To conclude this section it may be said that, overall, the view of the experts on the institutional arrangements was strongly in favour of the plurality of multi-purpose institutions and a widespread participation in the exercise of power in the determination of their functioning and responsibility.

VI. POLICY RECOMMENDATIONS AND CONCLUSIONS

The summariser of the papers and the discussions recommends, based on the available data, that the attention of government policy makers could profitably be centered on the following areas:

1. New professional teacher training as a condition of educational change

There was unanimous agreement that professional training both initial and in-service should be seen as an important component of educational change. Developments in the functioning of the educational service to achieve new educational and social policies, or

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1) R. Goddu, op. cit.

even the very process of social change itself, brought about striking changes in the roles of teachers. Only through properly planned, funded and valued programmes of professional training and retraining in which teachers came to achieve new knowledge, understanding and sensitivity, could changes come about in a way that maximised the advantage to the system as a whole and minimised the disruption and alienation that occurred when change was professionally unacceptable. But professional training was not just seen as an accompaniment of the changing role of the teacher, but as a potentially creative instrument for change in its own right. Indeed, if teachers were seen to be agents of change in, for example, bringing educational opportunities more fully to disadvantaged groups, then this could only take place effectively if appropriately focused training and retraining strategies preceded it.

2. Self selection for access to the teaching profession

The experts were strongly in favour of a strategy of access to the teaching profession, within agreed manpower forecasts, that allowed students the opportunity and guidance to select themselves and drew attention to a number of pre-training "diagnostic" periods which were taking place successfully. Not only was this seen to be desirable in itself, but also compatible with the view that sees the capacity of individuals to take part in decision making as a centrally important goal of contemporary educational systems - in short, the creation of "inner directed" rather than "other directed" adults.

3. Reform of initial period of training

a) To respond to change

Following from this the experts recommended programmes of initial training that were designed to give students in the training institutions the opportunity, not only to experience new roles of teachers in a way that allowed them to understand in a sensitive way, but also to be adaptable and capable of responding to change so that the new roles do not in their time become rigid and inflexible. It was emphasized that it was not that the teacher's role had changed but that it was changing.

b) To ensure further self-development

Yet, in the initial period of training limited objectives were seen to be appropriate - objectives that gave the beginning teacher a coherent ground on which he could go on to achieve personal and professional self development and the commitment and involvement essential for a sound professional identity. Though it was argued that such a foundation could be built through experience in a carefully chosen range of innovative schools, the experts recommended

that it was even more important for beginning teachers to have experience in a full range of schools so that they would be better prepared for the problems of introducing and defending innovatory work in ordinary ("regular") schools.

4. Reform of in-service training schemes

a) As the complement of initial training

The continuing nature of change led the experts to emphasize strongly the particular importance of in-service training as a necessary partner to new forms of initial training. Indeed, it was clear that one could no longer be viable without the other.

b) For all in the educational system

The wide range of in-service training that the experts were able to consider emphasized the outstanding flexibility and importance of this provision as an instrument for change not only for ordinary teachers but also for heads, advisers, inspectors and administrators.

c) For beginning and experienced teachers

It was recommended that in-service policies should identify two levels of provision - one for the first (probationary) year of teaching and the second for post-probationary activities. For beginning teachers in-service activities were seen to provide essential reinforcement of initial training. For experienced personnel in-service training was seen to provide opportunities for the development of personal, professional and management skills and detailed policy recommendations for appropriate programmes were offered.

d) To help teachers to participate in decision-making

Such opportunities offered teachers the chance to participate more fully in fundamental decision making and so enhance their professional status, often to a marked degree; an enhancement warmly endorsed by the Expert Group.

5. Governments' responsibilities

Finally, the experts reviewed institutional arrangements and welcomed clear governmental indications of access, standards and training programmes, recognising that governments alone had the global view and financial resources to initiate major decisions.

6. Partnership in teacher training policies and institutions

The need for partnership in the exercise of power between government, universities, training institutions, teachers and the community at large was strongly emphasized. In particular the need for partnership in the work of the training institutions themselves was emphasized in order to minimise their frequent academic and

occupational isolation with its unhelpful consequences both for teachers and their students. Such partnership was generally, but not exclusively, seen to involve links with the universities - particularly those universities that were moving to a more favourable evaluation of the status and significance of pedagogical studies and research and away from the traditional university view of education as a low status area.

7. Flexibility and openness

Overall, in institutional arrangements as in the training programmes themselves, the experts recommended policies of flexibility and openness in which there is full participation by the teachers and trainees themselves. It is in this way that educational policies could respond to broader social policies, implying closer relations between school and community and close affinity between education and employment in this particular sector.

8. Investment in renewed teacher training

In all their deliberations the experts were mindful of the costs of the strategies involved. But, given the widespread public agreement on the need for the expansion of educational services in areas of need, it was emphasized that better professional training, by enabling the more effective creation and utilisation of professional long-term capital - the teachers - could represent a particularly sound investment which, in the long run, was likely to give enhanced cost effectiveness to the educational system as a whole.

II

NEW PATTERNS OF TEACHER TASKS AND THEIR IMPLICATIONS(1)

by

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1) Summary analysis of discussions and papers at an Experts' Meeting held at the Château de la Muette, Paris, 26th-27th March, 1974.

2) The views presented in this paper are those of the authors alone and do not necessarily represent those of the Association.

INTRODUCTION

Teaching must change as the goals and objectives of education change. Factual information and ability to get a job or to get into a college or university are no longer sufficient. Neither is failure to educate a significant segment of the school clientele tolerable. This had led to increased concern for objectives such as: meeting the needs of individual students; curriculum relevancy; democratisation of schools; greater emphasis on creativity, inquiry, and on interpersonal relations and social problems; and attitudes toward society and toward learning itself. Therefore, the common theses underlying the papers on the new patterns of teacher tasks are:

i) Very few innovations have as an objective, in the first place, the modification of the conditions and ways in which teachers are employed, and yet all of them, in the end, call into question traditional teacher tasks and conditions of work.

ii) This calling into question originates in the need to individualise education to take account of the abilities and attitudes of each student; but also to encourage the social development of students.

iii) Given the available human and material resources, it soon becomes clear that a flexible and rational utilisation of these resources is needed to achieve the new objectives of the educational system.

iv) A policy of this kind would find support in particular in the results of certain scientific studies which conclude that improving the efficiency of education depends more upon improving the quality of the education offered than upon changes in material conditions, including that of variation in class size.

v) It may be noted, however, that any substantial improvement in the quality of education implies an initial investment directly concerning teachers and their conditions of work.(1)

For the most part, the innovative programmes the experts described and discussed have brought about three kinds of changes in the schools - the various forms of differentiated staffing, technology-dependent programmes, and what can loosely be called open learning plans. Examples of specific activities within these rather broadly defined categories include:

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1) OECD, "New Patterns of Teacher Tasks and their Implications", Background discussion paper - DAD/EID/74.22 (mimeographed).

Differentiated Staffing - Horizontal - The "3 or 2" Programme in Hawaii and the various other projects which involve the kind of team teaching that results in roles such as collegial planning, greater subject matter specialisation, more attention to pastoral or guidance activities, and more careful attention to recording and using data about individual student progress. Vertical - The various projects such as the Temple City, California model and other programmes designed principally to move students through the programme at a rate appropriate to their ability. The programmes have generally produced greater emphasis on such roles as: developer of specific learner objectives, including their sequencing and criteria for assessment; diagnoser of learning disabilities; prescriber of learning opportunities; record keeper, co-ordinator of outside resources; and direct instructor, often through such new mechanisms as mini-units.

Technology-Dependent Programmes - Technology-Dependent Programmes, such as the experiment at Marly-le-Roi (France), the various projects in Computer-Assisted Instruction, and those that use television for direct teaching of students. These innovations often call upon the teacher to move away from his or her traditional role as transmitter of information and to give greater stress to such roles as manager, diagnoser, and prescriber - with an occasional need to be a mechanic too.

Open Learning Plans - The various innovations somewhat arbitrarily grouped here range from massive and systematically planned and executed programmes such as those in the Malmö region of Sweden and the Infant Schools in Great Britain, to the School-Without-Walls work in Philadelphia, to the single classroom efforts of individual teachers to open up their programme. The names of these projects include open education, informal schools, flexible schedules, free schools, and so on. Teacher roles in them often emphasize facilitating inquiry, encouraging student independence, managing group dynamics, helping in the socialising process.

The various types of educational changes already reviewed by OECD showed that new roles are beginning to emerge.(1) Although the extent, direction, and weight of these roles cannot be determined in detail, there does exist sufficient evidence for detecting likely directions of their implications for teacher tasks and pointing up some probable trends in this area. This summary, then, attempts to identify those directions. It is organised in the following way.

The first section focuses on one of the major aspects of the changing context of the professional activity of teaching, at the basis of the new patterns of teacher tasks: the trends in the distribution of responsibilities for teaching and learning. In particular,

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1) The Teacher and Educational Change: A New Role, op.cit.

the interdependency, the independent study by the student and the role of the various media are reviewed.

The second section concentrates on the main implications, for the teaching profession, of the commitment to permanent participation in the adaptation of the educational system. This section therefore is mainly devoted to the types of environment most likely to favour the active and effective participation of teachers in educational innovation.

The following three sections deal in greater detail with the possible ways in which the teacher could perform his new tasks, through:

- flexibility in staffing patterns and regulations
- changes in working conditions
- new approaches to class size and quality of education.

Each section contains several sub-topics and in each of the subsections, there are supporting annotations/quotes from experts' papers prepared for the March 1974 OECD meeting.

The paper concludes with a statement on policy recommendations and conclusions.

I. TRENDS IN THE DISTRIBUTION OF RESPONSIBILITIES FOR TEACHING AND LEARNING

Teaching conditions existing in most countries are too often not compatible with or supportive of new educational goals and the implied diversified functions for teachers.

For example, teachers have tended to be autonomous decision makers in their self-contained classrooms. Now they are called upon to admit other adults - peers, educational specialists such as guidance workers, parents, teacher aids, specialists from the community - into their classrooms. They are sharing in their planning and teaching with other teachers in team teaching and other new staffing patterns. Teachers are even being urged to relinquish some of their teaching role to media.

Many of the papers prepared for the experts' meeting on New Patterns of Teacher Tasks and their Implications, contain considerable information on the trend from independence of teachers to an interdependency pattern. Three quotations will highlight the trend:

> "Staff differentiation in the public schools of the United States is not a new concept. The purposes and manner of implementation have undergone and are still undergoing change. The oldest model of differentiation was teacher/principal/superintendent with teachers being viewed more or less as interchangeable parts which performed like tasks for like pay. Departmentalisation by subject areas offered a degree of specialisation, but chiefly in terms of the content with which each teacher dealt. The adding of supervisors and specialists and, in about 1948, non-certified staff as teacher aides and assistants represented another type of differentiation. The roles were additive to the classroom teacher and did not result, to any degree, in differentiation of roles among teachers.
> "Team teaching was introduced in the mid-1950's. While affecting the way teaching is performed, it only occasionally causes different job descriptions or pay scales for teachers."(1)

> "The alternative policy of introducing ancillary aides into the classroom deserves some attention. The study of the primary teacher's day in England (Hilsum and Cane, 1971) revealed that 'only about 43 per cent of the (teacher's) time was on average allocated to lesson

1) A.L. Hyer and R.M. McClure: "The Effect of Innovations on Staffing Patterns and Teacher Roles" in New Patterns of Teacher Education and Tasks - Country Experience - United States, OECD, Paris, 1974.

instruction as such'. While a further 20 per cent was assigned to preparing and organising pupils' work, and 10 per cent to 'general supervision', much of the remainder was spent on non-professional activities such as supervising children's movements around the school and carrying out mechanical and clerical tasks. "The likelihood that teaching efficiency would improve, especially in schools with large classes, if additional 'helpers' were provided to relieve the teacher of these non-professional tasks would seem to be very high. It would not appear, however, that as yet there is any empirical evidence available to show that teaching efficiency is in fact improved with such help".(1)

"Differentiated staffing and other arrangements produce changed roles for teachers:

i) Instruction Assistants (average of 20 hours per week per teacher) oversee pupils' independent study, etc.; Clerks (average of 10 hours per week per teacher) keep records, etc.; General Aides (average of 5 hours per week per teacher) perform tasks not requiring competence in subject areas or clerical skills.

ii) Teachers are scheduled an average of not more than 10 hours per week with pupil groups (2 hours with large groups, 8 hours with small); the balance of 20 hours, mostly on school premises, are for keeping up-to-date, developing materials, evaluating, conferring and supervising.

iii) Most teachers serve a new role as teacher-counselor (helping about 35 pupils individually to plan, schedule, and change their independent study time and collecting information about each pupil's progress and difficulties).

iv) Teachers work individually in offices or in groups organised by departments or on some other basis."(2)

Teachers in the past have tended to be the authority figures in the classroom. Pupils and the community respected the teacher and expected him to plan and execute the teaching and to control the environment and the students. The new goals require the pupil to take an active part in his learning process and in the learning of others. The relationship between the teacher and pupil must be one of openness, trust, co-operation, and mutual respect.

The papers of two of the experts gave attention to the increasing responsibility of the student for his own learning and the implications of this for the teacher.

"The importance of involving the pupils in the planning and the management of the school work has been increasingly stressed in the new curricula in Sweden both for the grundskola and the gymnasieskola. National and international experiences have together contributed to that development.

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1) D. Pidgeon: "Class Size as a Factor of Pupil Performance - A Policy Analysis", annex to this volume.

2) A.L. Hyer and R.M. McClure, op.cit.

It started in Sweden in the middle of the sixties and the trend was intensified through the student movement at the end of the decade."(1)

"What are teachers doing now for students that students could do for themselves - if the students had the time, the places, and the materials for independent study? (Such an arrangement can save teacher time and energy while giving students more experience in 'learning by doing' and 'responsibility for their own learning' - both desirable educational goals.)"(2)

"Different models were drawn for the building up of these study projects. One aim was to give more room for the pupils' own activities, individually or in groups. This was to be attained by making the basic course, common for all, as small as possible. Thereby, room was given for a wider special course, enabling the pupils to choose their own tasks. The teachers worked in teams, planning the work as much as possible in co-operation with pupils and to a certain extent with parents."(1)

"Growing from the same traditions as informal education is a relatively new phenomenon on the American Educational scene, schooling without a building. The intent of this movement is to bring about significant and basic changes in the way in which school is conducted. A significant change proposed by the proponents of this form of schooling is the source of educational objective - the student himself. In many of these schools, students are trusted to make their own decisions about the kind of education they wish to receive and the way in which they will acquire it.
"In Philadelphia's now famous Parkway Programme, students made the first and most basic decision, whether or not to attend this school. After that, the student must choose everything he does within the programme. If he does not make a choice or cannot make a choice, then nothing happens until he does. Through a system such as this, students learn, with the help of advisors, to make decisions - hopefully with increasing skill - and to understand the process through which one goes to make such decisions."(2)

Another supporting annotation illustrates some of the problems created for teachers when student involvement is increased:

"It is a common trait of all the development projects in the Malmö area that they aim at making the pupils increasingly responsible for their own learning and for the work of the whole school. But school democracy is no easy task."(3)

The report of the results shows further the difficulties that some people encounter as students become more involved in decision making:

"The final outcome of the campaign was a polarisation among the pupils and partly among the teachers. The antagonism between radical and conservative groups among the pupils had for a time a paralysing effect on the

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1) B. Rodhe and B. Gran: "New Patterns of Teacher Tasks: A Report on Experience in the Malmö Region" in New Patterns of Teacher Education and Tasks - Country Experience - Sweden, OECD, Paris, 1974.

2) A.L. Hyer and R.M. McClure, op. cit.

3) B. Rodhe and B. Gran, op. cit.

work of the pupils' council. Many pupils, however, gained a positive impression of the possibilities for the pupils to influence their school situation and an increased will to do so in various contexts. Some of the exaggeration and one-sidedness of the pupils' planning made the teachers and school leaders less inclined to allow the pupils to take charge of more extensive units of study. This type of campaign, in which for a short time one theme is allowed to dominate almost all the activity in the school and the pupils are allowed to participate in the shaping of it, has since become more common.
"The attempt to increase the degree of school democracy at Källängskolan has shed light upon the constant dilemma that arises in such experiments. If the pupils' influence is too restricted and formal, it does not succeed in motivating the pupils and changing the usual passive attitude to one of responsibility and co-influence. If, on the other hand, the pupils are given a great deal of freedom in influencing their own situation at school, the contradictions in a modern industrialised society can give rise to activities that create conflict within their own ranks."

Teachers formerly relied to a great extent on textbook assignments lecturing, and question/answer or drill requiring rote learning. Now new methods are needed to accomplish broader and more socially-oriented goals. No longer is it sufficient to "teach the class"; provisions must be made for the individualisation of instruction. Teachers must also utilize a variety of teaching/learning resources, print and non-print, as well as resources outside the school itself.

A thread running through almost all of the innovations reported by the experts was experimentation with ways of individualising instruction. The papers not only supported this but contained a number of case examples illustrating different kinds of attempts to achieve this goal:

"Critics say that schools dispense lock-step education geared to middle class students who are print oriented and academically motivated. The students of the schools, as well, are becoming more varied in their social background, educational interests, and style of learning. Teachers, too, vary as to the kind of students and content with which they are most effective as well as finding themselves more successful with certain teaching styles than with others.
"Individualised learning methods emphasize motivation, continuous progress, self-direction, individual scheduling, personalised evaluation, and attention to personal needs and interests, while maintaining pupil accountability."(1)

There were many other citations about specific aspects of individualising instruction through various devices:

- Individualised mathematics teaching
- Open classrooms
- Schools without walls
- Individually Guided Education
- Multi-media utilization

1) A.L. Hyer and R.M. McClure, op. cit.

- IPI: Individually Prescribed Instruction
- Computer assisted instruction.

II. THE COMMITMENT TO PERMANENT PARTICIPATION IN THE ADAPTATION OF THE EDUCATIONAL SYSTEM AND ITS IMPLICATIONS

The teaching profession is living in the midst of the current educational ferment and pedagogical innovation in a state of uncertainty and anxiety. Teachers are being expected to embark on courses of action for which they were never prepared, which may be incompatible with their life goals, and of which they are not sure of remaining the master.

There is little wonder that innovation tends to wither away, or to be "locally adapted" until it is no longer serving its intended purpose or that schools find a way of using the language of innovation to provide a cover-up to protect themselves from real changes. Certain changes in educational support and incentive structures should be experimented with in order to overcome the conservatism of the educational institution:

a) Creating a favourable environment or support structure for change - numerous methods of supporting meaningful change were suggested in the papers and in the discussion of the experts. Among these methods four seem particularly important: providing adequate leadership; creating buildings, facilities, and teaching materials conducive to constructive change; ways to adapt innovations to match local needs; and the removal or alteration of negating policy regulations. Each is treated separately below.

   i) Leadership - Provision of adequate leadership is important. Administrators and supervisors can maintain a permissive climate for change, make known their expectation that experiments will be carried out, make failures as well as successes a learning experience, and provide creative leadership. Researchers and instructional development agencies can also play a supportive role. Although leadership was recognised as an important factor in successful innovation, surprising as it may seem, little attention was devoted to this subject in either the papers of the experts or in the discussions. Indirect attention was given to leadership of the discussions of team teaching, co-operative teaching, and differentiating staffing, however,

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where team leaders or "master teachers" are utilized. The following quotations indicate other concerns about leadership. In the Malmö, Sweden experiment, for example, a way to systematically bring more expertise to political decisions was tried:

> "Furthermore, the city authorities made it possible for the Board of Education to create an organisation of educational advisors, supplemented by expert groups of teachers who offered active help to their colleagues in fulfilling their new and difficult tasks. In these expert groups, teachers of different competence pooled their skills in order to help the city authorities and their colleagues with the selection and production of suitable material and with the introduction of new methods of work."(1)

Other innovations have pointed to the need for a recasting of a previously established leadership role, as with the Trump Plan for differentiated staffing:

> "The principal spends three-fourths of his time working directly with teachers to improve instruction and learning."(2)

B. Rodhe and B. Gran discussed the settings for leadership growth:

> "Educational development centres have proved valuable instruments for the emergence and implementation of innovations through teachers, administrators and local authorities."
> "Early on in the period of the introduction of the grundskola, the need was felt for a more systematic attempt at developing suitable modes of work, primarily for individualisation and social education. The experience gained from a couple of individual schools where experimental work had been carried out in the 1950s was incorporated in the creation of the Educational Development Centre of Malmö, which started its work in 1964 after a parliamentary decision of the same year had made the creation of such centres possible. From the very beginning, the work of the Centre related itself to and aimed at incorporating efforts by teachers who were already at work, trying to find workable ways of realising the objectives of the grundskola. With these existing teacher initiatives as points of departure, the Centre developed some series of projects, all in the spirit of the parliamentary decision which formulated the objectives of the educational centres as being: '/to find/ practicable ways of giving effect to the intentions of the educational reforms proposed or already decided, also at the levels higher than the compulsory school, and to facilitate the progressive revision of the curriculum'.(1)

ii) Buildings, facilities, and teaching materials

Teachers placed in a new and challenging environment tend to respond creatively. It is important

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1) B. Rodhe and B. Gran, op. cit.

2) A.L. Hyer and R.M. McClure, op. cit.

that the physical environment support new teaching/learning strategies and it is equally important that the materials of instruction, including media, are also stimulants for constructive change. The experts, however, did warn that when radical changes in buildings are made, such as open school designs, it is advisable to use "volunteer" teachers rather than to arbitrarily assign teachers.

Several of the experts in writing about innovative schools gave attention to how school buildings and teaching facilities supported innovations or how they acted as deterrents. It would appear that many new building designs are supporting new trends in schooling. In the Malmö area (Sweden).(1)

"As a new pedagogical organisation emerged, teachers found themselves hitting walls, which often seemed to be in the wrong place. The traditional school building did not fit the new pedagogical models. One of the results of development work in the Malmö area has been to design a new kind of school building which should function better than traditional ones for the new pedagogical models. These new schools can be characterised as open plan schools....

"During the experimentation with team teaching and flexible grouping and integration of subjects, the traditional organisation of space and placing of material was often felt to be a restrictive factor.

"The local Board of Education was favourable and able to influence the City council into giving relatively generous amounts of money towards new educational equipment. At the same time, library and audiovisual centres were established for the whole school system, offering technical service and pedagogical advice, to some extent also being a central store for films, and such tapes, records, books, etc., as are not in constant use at the schools. The existence of these centres makes it possible for school librarians to take a more active part in the actual teaching situations, being liberated from the greater part of the technical chores."

In the United States.(2)

"Trump and Georgiades propose several new ways to use facilities and money: Reduce overcrowding by introducing more independent study, large-group instruction (presentations), and small group discussion:

- Remove a wall between two classrooms and substitute chairs for school desks (arranged in semi-circular fashion to face the presenter now stationed in the front, on the window side now covered by a curtain or green paint); this facility houses twice as many pupils as in conventional classrooms.

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1) B. Rodhe and B. Gran, op. cit.

2) A.L. Hyer and R.M. McClure, op. cit.

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- Install two partitions in a conventional classroom to produce 3 small-group discussion rooms, substituting chairs in a circle for school desks; this arrangement accommodates 50 per cent more pupils in the same space.
- Change classrooms into study and work centres for independent study; schedule more pupils for some supervised study and work in the community, with appropriate arrangements for accountability.
- Convert corridor, lobby, and cafeteria spaces into independent study areas; pupils can walk through such areas while other pupils are working, especially under flexible and individualised schedule arrangements."

The architectural project of the French experiment at Marly-le-Roi was "reform compelling" and the settings were planned to "prevent a return to obsolete teaching-learning methods".(1) Several of the case studies dealing with specific types of media also dealt with facilities supporting their use, e.g. television and computer assisted instruction.

iii) Innovations selected to meet local needs - Not all innovations are transferable in toto from one school to another. Also, the innovating institution should be certain that any financial costs of the new procedures can be sustained by the local school district. This is especially important if money from an "outside" source is used in getting the innovation started.

Several comments are made in the papers which support the need for criteria to assess the local need for a particular innovation. A.L.Hyer and R.M. McClure(2) give some examples of such criteria, based on the U.S. experience:

"In order to help clarify the distinctions and features of the innovations described in this paper, the authors have developed a table which, in a generalised way, compares several innovations on four variables. (See Table 5). A study of the chart reveals that the first decision needed when considering installing an innovation is one of purpose: are the present goals and objectives acceptable? Are new ones to be substituted? Are new ones to be added on? Is the total school population to be affected or only a particular segment? Must the innovation be achieved without increasing costs or can the 'value added' be financed through increased costs? An innovation may fit some conditions but not others. Conceptualising school problems and building solutions that match need is the important first step in improving educational quality...."

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1) J. Poinssac: "Experiment of the College of Secondary Education at Marly-le-Roi and its Implications for Teacher Tasks" in New Patterns of Teacher Education and Tasks - Country Experience - Belgium-France-United Kingdom, op. cit.

2) A.L. Hyer and R.M. McClure, op. cit.

"After the goals for an innovative practice have been established, it will be found that some kinds of innovations will accomplish the goals much less expensively than others in a given situation. (See Appendix III and 24 in Bibliography). Factors that must be considered include: (a) the cost of initiating the innovation; (b) the availability of the materials to support the innovation, and the cost of these; (c) the size of the student population to be served; and (d) the degree of diversity and decentralisation within the school system."

iv) Removal or alteration of negating policy regulations - Often requirements beyond the control of the single school present barriers to change or support conservative elements in faculties or communities. Examples are provincial or national examinations for students, budgetary procedures, and task or role allocations. Sometimes lack of clarity about or too many decision making points can be deterrents to change.

B. Rodhe and B. Gran(1) describe a system in Sweden which has tried to demonstrate flexibility:

"A school which aims at combining these means for achieving its basic objectives needs to develop in the direction of increased flexibility in the use of its resources as well as in the several activities of the school....

"The economic framework for schools where development work was carried out was mainly the same as in other schools. As a small remuneration for time given to conferences, planning and reporting, the personnel engaged were given annual fees, seldom amounting to more than the regular pay for a couple of teaching hours. Basically, however, the allotment of teaching staff in these schools was figured out according to the same rules as for the whole school system. These rules are part of a complicated system of state grants, of which an outline is given in an Appendix to the Report. As teacher salaries are mainly financed through state grants, whereas building and equipment as well as personnel other than teachers are mainly paid by the local authority (the state also gives grants towards the cost of new school building), it is hard to convert teacher time into any other kind of resource for the school. However, a special government decision made it possible for experimenting schools to transform teaching time into time for non-pedagogical aids, teaching material, etc.

"One of the biggest innovations in Lgr 69 was the introduction of resource-time and resource-hours. In Malmö, teachers' assistants were employed and some teaching materials were bought for the 20 per cent of the resource-time that was the stipulated limit for that particular purpose. There was also the possibility of putting some of the resource-time into a 'time-bank' to be used for guest-lecturers, extra work due to study-visits, etc., the greatest part of the resource-time in the orientation subject area, amounting to three hours per week and class, must however be distributed among the teachers. At some schools this distribution was

1) B. Rodhe and B. Gran, op. cit.

made for a week at a time which meant that some teachers' attendance varied considerably from one week to another.
"In 1971 a Government Commission was appointed with the task of investigating the internal school work. The Commission is studying the effects of greater liberty for the individual school in administering its teacher resources. In addition to the so-called resource-hours, the school also has a freer use of remedial teaching than other schools."

In the Swedish experiments there appears to have been a lessening of a problem that has caused difficulties for many innovators:

"The decision structure in the formal system is hierarchically built up not only on a national and local basis but also within the individual school with the head-master, director of studies, senior teachers, teachers, pupils. In the experimental work this has been broken down and replaced by functional teaching teams, where the team and not an individual person is responsible for the work. The legal structure then is built up hierarchically, and the real structure functionally. This means a situation where the two structures very often come into conflict. There are for instance cases where the real responsibility for the working situation in a school is in the hands of the teams, but the legal responsibility rests with the head-master, director of studies, etc."

b) The experts were in agreement that much consideration should be given to the subject of creating incentives for change. As has been previously stated, the teaching environment was viewed as one way of encouraging and supporting change. The two incentives most frequently mentioned in the papers, however, were teacher involvement in planning and implementing innovations and meaningful in-service education.

i) Teacher involvement - The teacher is an educational expert and as such has a right to expect that he will have personal involvement in "modification of educational processes and structures. However, the teacher's personal possibility to innovate and/or his acceptance of an innovation, and in particular the opportunity afforded him of 'appropriating' it, will also depend on the availability of mechanisms of participation and dialogue which would enable him to comprehend and discuss the major changes which may be introduced.'(1) To ignore the teacher and to "thrust innovation upon him" is to court failure for successful establishment of an innovation depends on the teacher investing enough to overcome inherent resistance - a vested interest is needed. Much attention was therefore focused on the need for such teacher involvement:

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1) Topics for discussion at the Conference on Teacher Policies, op. cit.

"There are some types of activities which hold promise for encouraging educational institutions and teachers' associations to view experimentation with teacher roles and staffing patterns in a more favourable light. Among the many that could be mentioned are the following:
- Involve teachers and teachers' associations in the planning for innovations. Become more definitive about teacher role in decision-making - insuring its place at the instructional level and at planning stages."(1)

"There has been a tendency from central authorities to try to promote the educational progress in certain directions. In some cases the local development comes into conflict with this. Local research and developmental work may have difficulties being accepted by the central authorities. Even if there is a quite clear effort to come to a dialogue between central and local interests, difficulties sometimes arise in making this dialogue fruitful.
"The unions of the teachers have a positive attitude to educational research and development activities. But they often make another priority of what are the most needed measures to take. All the unions of course try to develop the best economic and working conditions for their members. Some organisational experiments and new working conditions may in some instances be seen as a threat to existing routines or privileges. The unions of the teachers recommend their members not to engage in local organisational research and development work without permission from the unions."(2)

ii) In-service education - Governments have an obligation to provide for the retraining necessary for teachers adequately to plan and implement new instructional practices. This in-service education should precede and continue through the early stages of innovations. A. Hyer and R. McClure(1) in their paper summarise some types of activities which hold promise for encouraging educational institutions and teachers to view innovations in a more favourable light. One of the suggestions was:

"Providing adequate in-service education and professional development both before the innovation is introduced and during the implementation stage. Emphasize an individualised approach to this kind of teacher career development."

B. Rodhe and B. Gran(2) make two other points about in-service education:

"In previous parts of this paper we have discussed what knowledge and which new skills the developmental work has required in the teacher. Acquiring more knowledge is a summative process, which means adding new knowledge to old. From a psychological point of view this is the easiest process. Acquiring new skills is in many instances a formative process, which may require breaking down old habits and building up new ones. In many instances this is a difficult process and one can expect opposition from the teacher....

1) A.L. Hyer and R.M. McClure, op. cit.

2) B. Rodhe and B. Gran, op. cit.

"Difficulties related to a lack of knowledge are noticed both in people responsible for the experiments and in teachers and other persons involved in the experiment. In-service training is often a solution to these difficulties. As has been shown previously, the resources for the training of teachers and school personnel rest with the state (in special organisations and colleges for teacher training). Therefore one problem not yet solved has been how a locally innovated experiment can rely on the central resources for teacher training. A related problem is that there have not been resources or time for systematic analyses, which provide the new knowledge needed in an experiment. Often therefore the in-service training, courses, etc., have not met the real needs. Here methods for a more systematic analysis are being developed."

iii) Other incentives - Suggestions made during the debates included: opportunities for higher salaries, improved professional status, increased eligibility for promotion, higher prestige with students and parents, and more opportunities for specialisation of teachers in accordance with their interests and abilities. The discussions and the papers stressed the necessity to meet identifiable needs in providing incentives:

"An innovation must in some essential sense meet the needs of the people involved in the innovation. In psychological terms one may speak of 'need-reduction'. For instance the teachers must feel that there is a problem that needs to be solved. It is not always clearly seen how a particular experiment can meet such needs...."(1)

"Innovations which cause teachers to feel more productive and professional have a better chance of success than those which tend not to affect that variable. Examples of favourable innovations might be those that tend 'to turn students on,' reduce discipline problems, produce a decrease in the need for reteaching, relieve teachers of non-instructional tasks, and the like. Also, innovations which reduce teacher/student encounter time have a greater chance of success."(2)

A. Hyer and R. McClure(2) also discussed the question of incentives from two other perspectives - teacher role dissatisfaction:

"As teachers' competency increases, there is no longer justification for instructional decisions being made by supervisors and administrators further removed from the clients and little better prepared to make the decisions. Teachers are demanding inclusion in instructional decision-making. Differentiated staffing provides a machanism for accomplishing this."

....and lack of a career ladder for teachers:

"Salary increases in the traditional school depend on years of service and number of college credits accumulated, not on the nature or quality of the services performed. Teachers who wish to advance in their profession must become supervisors or administrators. Good teachers should be able to

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1) B. Rodhe and B. Gran, op. cit.

2) A.L. Hyer and R.M. McClure, op. cit.

earn as much as administrators while following a career as a classroom teacher. It is recommended, therefore, as a means of providing this ladder by many developing differentiated models, that salaries for some classroom teachers should be at least two times the level of the lowest classroom teachers' salary."

c) For at least 3 reasons there is need to increase participation, dialogue, and confrontation about the selection and maintenance of innovations. First, most educational innovations have originated outside the schools expected to implement them and frequently were introduced by administrative personnel without teacher involvement in the decision-making process. Also teachers, as a part of their original career education, developed an attitude toward teaching and the role of teachers that makes it difficult for them to cope with some of the changes in goals and practices. Thirdly, teachers, because of the nature of their work, spend a large percentage of their working hours with youth rather than with adults and this minimises their opportunities of exchange and dialogue with the rest of society. Such isolation is stultifying for teachers and detrimental when they must operate in a world where the lines between a school and the world outside are breaking down.

These conditions indicate the need for changes as outlined, in greater detail, in the first chapter. In pre-service education efforts should be made to develop in future teachers an openness toward change and experimentation. In-service should not focus only on "how to do it" information but with the whys - the value system - underlying new processes and procedures. It is important, too, to provide more time and opportunity for teacher/community communication as well as to involve early and meaningfully teachers and their associations in positions involving innovations.

The topic of achieving meaningful participation received more attention during the oral discussions of the experts than it did in the papers themselves. A few quotations from the Swedish contributions, however, will point up the basis for the discussions:

"Difficulties arising during the process of innovation in Malmö demonstrate the importance of attempting to involve everybody who would be affected by the innovations in the process itself and offering them an opportunity to influence the research and development work. From the start of the educational developmental area in Malmö, there has been a co-ordinating committee with representatives for teachers, administrators, researchers and other persons involved. Nevertheless conflicts and misunderstanding have arisen, especially between representatives of the unions of teachers and the school authorities. Therefore, at present, in all experiments where teachers or other

personnel are affected, they are invited to send representatives to reference groups. Very often, pupils and parents are also represented in these groups. A fruitful dialogue between teachers and others involved on the one side and those responsible for the research and development work on the other hand, has emerged. The outcome of this dialogue is exerting a positive influence on the innovative process itself. In a previous section the risk of the union of teachers having a conservative influence is discussed. Therefore it is very important to find ways of involving both unions and other more or less official representatives of the parties involved so that positive reform work is favoured....
"Many difficulties appear within the area of attitudes. The first appears if the aim of the project is vague. This may result in confusion among people engaged in the experiment. Those involved develop their own picture of what are the aims of the experiment.
"Another difficulty is that the attitude of the innovator is perhaps not conveyed to those engaged in the experiment. Thirdly there may be a real conflict in attitudes and values among those who work within an experiment if steps are not taken to try to solve this problem of values."(1)

"Since the government considered it important that the reliability of the results be accepted by the teachers as well as the politicians and the general public, representatives of employers, trade unions and experts were all appointed to the Committee. It was composed as follows: three representatives of the state and the municipalities; three representatives of the teachers' unions; and one expert each in the fields of school administration, resource rationalisation and statistics. All investigations were unanimously determined by the Committee members and subsequent statistical surveys were carried out by the Central Bureau of Statistics in collaboration with the secretary of the Committee."(2)

"The new patterns of teacher tasks which have emerged as a result of development and research in the Malmö area have been created by teachers who have wanted to solve the problems that the new schools posed. This, perhaps, is one of the reasons why teachers' unions were slow to react to what was happening. Only around 1970 did they seem to discover that radical change was taking place as a result of development work. Their reactions were sharp, and since then constant discussions have been running. Conflicts have sometimes arisen, at present aggravated by the fact that Sweden faces a surplus of teachers."(1)

Increasing the amount of participation in decision making is, of course, often accompanied by much frustration. So much so that administrators often retreat to other days when clean lines of hierarchical authority seemed to produce order and productivity.

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1) B. Rodhe and B. Gran, op. cit.

2) K. Bodell, "The Working Conditions of Teachers in New Patterns of Teacher Tasks - Country Experience - Sweden, op. cit.

III. FLEXIBILITY IN STAFFING PATTERNS AND REGULATIONS

A necessary requirement for effective innovation is flexibility in staffing patterns and regulations. Among the patterns discussed in the papers of the experts were:

a) Team teaching
b) Differentiated staffing
c) Increase in use of middle management
d) Increase in the use of specialists; e.g. psychologists
e) Use of auxiliary aids
f) Use of students
g) Use of adults from the community.

Experience to date does not point to a decrease in staffing costs, but rather to some possible ways of increasing the ratio of adults to students without increasing salary costs.

Only a passing reference was made to barriers within the teaching profession which interfere with career patterns. In many countries the separation between teachers of boys and girls, of pre-school and primary, primary and elementary, elementary and secondary, and secondary and teacher education are major barriers to teacher mobility and co-operation.

The following seven sections (a through g) summarise the experts' views on those influences on staffing patterns listed above.

a) Team Teaching - Some of the experts tended to use the term "horizontal differentiation of staff," others referred to co-operative teaching," and others simply to "team teaching". The three expressions were used almost interchangeably in the discussions. The concept of team teaching will be clarified by the following citations from two of the papers discussing illustrations of team teaching in some detail. The first example relates to the Malmö experience.(1)

> "A description of co-operation in action: Miss A. a primary school teacher, and Mrs. B. a pre-school teacher, have for the last term been co-operating in various ways. They have exchanged information about and discussed the methods, content and material used in the two school levels. Miss A. has been able to participate in the extensive educational activities pursued in the pre-school, activities that she had previously known little about. Mrs. B. now knows more about what awaits her pre-school children when they start school and can prepare them for the transition more effectively than before. The teachers also make use of each other's experience and special knowledge on the occasions when the children work together. Just now Miss A. is visiting Mrs. B. in order to plan how they are to co-operate the following

1) B. Hedhe and B. Gran, op. cit.

day. Miss A. has noticed that some of the pupils in her class have difficulty in handling a pair of scissors and need to train their skill in cutting. It would be a help if they could practise in the pre-school, where easily-handled scissors are available. The two teachers discuss what type of work might be suitable and which children need such training.

"At three schools the work during the first year reached so far as to give material for a general report. The teachers of social orientation subjects at one school co-operated during a period in the study project 'EFTA and EEC'. At another school the natural sciences teachers together based a study project on the theme 'The Car', and at a third the teachers of social orientation subjects concentrated their collaboration in the two fields of interest 'China' and 'Neighbourhood'. These three schools had several problems in common: teaching materials, timetables and premises. The co-operation within the new teacher-teams was built up around these questions. Soon they became aware of the defects of the existing teaching materials when it came to co-ordination of subjects and activity-pedagogy. Thus, the teachers had to produce their own materials both to complement existing ones, to co-ordinate them and to make them more fit for independent pupil work. Special allowances also enabled purchases of complementary books, newspapers, slides, maps, etc.

"Gradually a new model was developed for work at the senior level. This model was entitled PEDO which means Pedagogical-Organisational experiments and which implied the testing of an organisation with working units of two-three classes (60-90 pupils), continuous working periods and teacher-teams. This model would form a solid frame-work for further development of the collaboration and would also give more favourable conditions for flexibility and, as a consequence, more individualised instruction..... The teaching-matter was structured in study projects, which could be either subject-related (from only one subject) or combined (from several subjects within either the natural or the social sciences sector) or what was called overlapping (from both sectors above). Different models were drawn for the building up of these study projects."

The second example(1) indicates that:

"Team teaching was introduced in the mid-1950's. While affecting the way teaching is performed, it only occasionally causes different job descriptions or pay scales for teachers. In other words, in team teaching the differentiation is 'horizontal' in nature - different tasks but equal in value...."

b) Differentiated Staffing - is a more radical departure from the traditional pattern of staffing than is team teaching or co-operative teaching. In this plan, teaching tasks are differentiated and distributed among teachers. Frequently there is a different pay schedule and elements of middle management resulting from a hierarchical arrangement of the staff from team leader to teacher aide.

The following quotes illustrate the concept of differentiated

1) A.L. Hyer and R.M. McClure, op. cit.

staffing:

"...American Education is possibly one of the last of the cottage industries, in that all educational tasks are commonly entrusted to a single worker - the teacher in the self-contained classroom. But the learning experience is diverse, and this would suggest that classical tools of specialisation might be applicable for education as well as manufacturing projects. For example, Joyce has pointed out seven functions of the teacher, co-operative group leader, organiser of others, conveyer of information, therapist, self-instruction specialist, instruction resource specialist, counselor, subject matter specialist. Presumably some teachers are more adept in some of these functions than others. Or, if we look at the instructional process, there is some need for lecture, some for discussion in large classes, some for discussion and interaction in small seminars and tutorials, some for drill-skill practice and so on. The organisational plan which can arrange to utilize specialisation and division of labour is differentiated staffing. The idea is already well known and it has been tried with seeming success in a number of American school districts. It has the advantages of being quite flexible and of establishing a much more satisfying teacher career progression (or so it would seem). Because of its flexibility, differentiated staffing could achieve the synthesis discussed above between a uniform educational experience and individualisation."(1)

"The innovative programmes in team teaching, chiefly at the elementary level, and the NASSP models at the secondary level, have influenced hundreds of schools and also have prepared the way for more radical experimentation in staff utilization involving hierarchical or vertical differentiation of teaching staffs and a departure from the single salary schedule. The first such experiment in differentiated staffing was conducted in Temple City School District, California in 1956. The U.S. Office of Education itself has funded 24 model projects which roughly meet this definition: 'A teaching hierarchy with extensive vertical and horizontal differentiation of roles and with job responsibilities keyed to a differentiated pay scale'."(2)

A few cases are described in the papers in detail

c) Middle Management - Some students of educational problems, particularly economists, feel that staffing patterns in education could be improved if certain concepts of middle management were to be instituted. By middle management is meant a management level that intervenes between the classroom teacher and the administrator of the school or school system. In some primary schools the principal serves this function but this occurs less frequently at the secondary level.

Two experts explored some notions related to middle management.

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1) H. Kiesling: "Staffing Patterns and Costs in Alternative Educational Futures" in New Patterns of Teacher Education and Tasks - Country Experience - United States, op. cit.

2) A.L. Hyer and R.M. McClure, op. cit.

H. Kiesling,(1) in projecting a plan for a new school, gives this interpretation:

"The chief management of day to day instruction that obtains with differentiated staffing plans comes from a Master-Teacher/Team-Leader, who may direct a team of several senior teachers, staff teachers, associate teachers, and paraprofessional aides. The Master Teacher along with his or her senior teachers, using guidelines set down by the school principal, will decide upon the schedule for the perhaps 150 students for whom he is responsible."

A. Hyer and R. McClure(2) reported a similar concept in action:

"In the NASSP or Trump Plan, the role of the school principal was changed so that a greater percentage of the time could be spent in middle management functions of instruction. This, coupled with horizontal differentiation in the role of certified teachers and the addition of teacher aides resulted in a new staffing pattern. In the Temple City and Mesa differentiated staffing experiments, certified teachers are arranged in a hierarchical pattern so that a middle management function emerges. This pattern can also be seen in the IGE multi-unit school where senior teachers take on middle management programme functions."

J. Poinssac(3) adds that:

"....the use of educational technologies involves a concept hitherto alien to the educational system - that of the economic return on the equipment and on the people using it; the new responsibilities are thus similar to those encountered in a business firm."

d) Use of Specialists - Staffing patterns are also being changed through the addition of specialists, some certified as teachers such as reading specialists; others not, such as psychologists. The addition of such specialists naturally changes the role of the regular teachers.

The report of the work in the Malmö Region of Sweden(4) provides some concrete examples of the trend toward the use of Specialists:

"When the functions of the schools have become more and more complicated, it has not been possible for a single teacher to handle all these duties. In the developmental work in Malmö we can see how new types of personnel are introduced into the school system to fulfil some of the duties. These personnel are mostly of four types:
- Personnel for pupil welfare functions, which means school psychologists, social welfare workers, clinic teachers.
- Personnel for teaching aids functions, which means educational advisors and teaching aid consultants, school librarians and so on.

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1) H. Kiesling, op. cit.

2) A.L. Hyer and R.M. McClure, op. cit.

3) J. Poinssac, op. cit.

4) B. Rodhe and B. Gran, op. cit.

- Personnel for mostly non-pedagogical functions such as assistants and clerks.
- Personnel for leisure-time activities linked to the school day, such as youth leaders and recreation leaders.

"Adjoining the Malmö School of Education there is a special school-unit for experimental and demonstration activities. At one of these schools the teacher-team in social orientation subjects has been given a special function as to pupil welfare during the last few years. The teacher-team meets every fortnight with experts on pupil welfare. At these conferences they decide upon which measures to take on the basis of observations made by members of the teacher-team.

"In addition, the resources for guidance and pastoral care at each school were augmented. The efforts of teachers and principals were supplemented by school psychologists, social workers, vocational guidance teachers etc., and teams for the pastoral care of pupils were developed."

e) Auxiliary Aides - The use of auxiliary and ancillary aides to teachers has been increasing in most of the countries represented by the experts. These may vary from clerical assistance to instructional aids. The quotations below will indicate some of the types of tasks such auxiliary aides perform. In the Malmö experience.(1)

"The scope of the assistant's work is normally subject to local circumstances but the following tasks are probably her most important ones:
. To attend the lessons
. To be responsible for the material
. To register the current work of the students
. To register student data
. To correct diagnostic tests
. To copy out and make stencils of material produced by the teacher for group instruction
. Clerical duties of various kinds, including keeping the minutes at conferences, notes on group instruction, notes on absence."

In the USA(2)

"Instruction Assistants (average of 20 hours per week per teacher) oversee pupils' independent study, etc.; Clerks (average of 10 hours per week per teacher) keep records, etc.; General Aides (average of 5 hours per week per teacher) perform tasks not requiring competence in subject areas or clerical skills.

"By non-instructional tasks is usually meant such assignments as playground supervision, monitoring study halls, athletic events, and social events; filling out forms and reports, typing tests, and reproducing these, inventory supplies and the like. Studies vary in the amount of non-instructional time which teachers put in, but in all of them it is a sizeable amount. For example, in a recent study done by Gerald Krunbein of high school teachers in California, it was shown that approximately one-fourth of the teacher's total time was spent executing non-instructional tasks."

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1) B. Rodhe and B. Gran, op. cit.

2) A.L. Hyer and R.M. McClure, op. cit.

But now problems have arisen. In Sweden.(1)

"Many schools which have had assistants for years have therefore let them disappear, going back to a more traditional way of organising the teachers' work. This is connected with an increasing surplus of teachers during the past few years. We find here the same tension as we have found in experimentation with the IMU system between the wish to professionalise the functions of the teachers at the individual schools and solidarity with the teacher collective as a whole. The tendency now among many teachers is to try to prevent other categories from being involved in the teaching process.

D. Pidgeon(2) also indicates that:

"Ancillary help, particularly in the form of trained adult aides to assist in the teaching/learning process is only possible in classrooms that have moved from "chalk and talk" methods and have adopted alternative techniques and approaches. Opposition, however, to the use of only partially trained personnel operating alongside qualified teachers in the classroom is not uncommon - the argument being that, apart from preserving the professional status of teachers, the efficiency of the teaching is bound to suffer and consequently the standards of pupil achievement to fall. Such opposition fails to recognise that the use of ancillary help is not intended in straight class teaching situations, but only in those schools and classrooms where the emphasis has changed from teaching to learning. IMU experience in Sweden, for example, has demonstrated that two specialist teachers and one assistant with lower qualifications could replace three specialist teachers, without loss of efficiency but with a cost saving, provided new programmed and individualised materials were employed (L.C. Taylor, 1970)."

f) Use of Students - Increasing attention is being given to utilizing the fact that students can learn much from other students. Experiments with peer learning activities have been quite successful and a few references to this appear in the experts' papers. Little, however, was said about the effect of the use of students in the role of teachers.

"The use of pupils to help other pupils learn has been pioneered in the United States by Thelen (1968), and this and other strategies for providing appropriate learning resources are discussed under the concept of Mastery Learning (Bloom 1968, Block 1970)."(2)

"The more important step taken in order to obtain a higher quality in the schools is the use of the pupil as a resource in the school work. In several of the projects in Malmö (PEDO, VGT, School democracy, etc.) the intention has been to give the pupils better opportunities for using their potentials in the school activities - for their own development and that of their fellows. This may have an effect on the 'power-balance' between teacher and pupil."(1)

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1) B. Rodhe and B. Gran, op. cit.

2) D. Pidgeon, op. cit.

g) Use of Adults from the Community - The use of non-certified community helpers is closely allied to the use of ancillary aides discussed above. However, the role they play is usually somewhat different, as will be illustrated by quotations from experts' papers. The first citation from L. Sussmann(1) in a contribution to an earlier OECD activity on teachers, illustrates a variety of roles adults from the community can play:

"Innovative schools aim to involve the parents heavily in the school, and the community beyond the parents as well. There are many boundary-spanning roles in innovative schools, which facilitate this involvement. One is that of community aide or para-professional, who is often a parent of school-age children. These aides usually come from the neighbourhood. They know the children's culture better than the teacher does. They have prestige in the neighbourhood because of their occupational positions in the school. Thus, they represent a link between community and school with loyalties to both, and can be very important in preventing misunderstandings. The parent-trustee in the private school is a similar boundary-spanning role. Community people who teach their own occupational skills represent still another. In general, it is the increased number of boundary-spanning roles, rather than the traditional parent-teacher organisations, which bind the school and community more closely together."

In the second citation, a caveat is indicated which was voiced often during the discussions:

"The possibility of schools enlisting the voluntary help of parents and other members of the community was also envisaged by the Plowden Committee - provided always that 'such help is...under the strict control of the head teacher'."(2)

Finally a unique programme (but really somewhat an approach taken from early educational practice) is discussed in the use of a community for educational purposes. A.L. Hyer and R.M. McClure(3) indicate that:

"In the case of Parkway, there is a rich variety of choices available to the student, for he has the whole city from which to choose his teachers and his curriculum. If he wants to study journalism he does so at the metropolitan newspaper; if he wants to be an artist, he works in an art museum; if he wants to learn a business the staff of the school will help him to find an appropriate resource. In short, Parkway created a learning community with its structure being provided by student choice and tutorial groups."

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1) L. Sussmann: "The Role of the Teacher in Selected Innovative schools in the United States" in The Teacher and Educational Change: A New Role, op. cit.

2) D. Pidgeon, op. cit.

3) A.L. Hyer and R.M. McClure, op. cit.

IV. THE CHANGE IN WORKING CONDITIONS

Greater student autonomy, growing co-operative efforts among teachers, and new ways of teaching and learning have significant changes in the tasks teachers perform. But changing a dynamic social system without proper attention to the various component parts of that system can produce disequilibrium. It would appear that such is the case with many schools for, as one of the recent OECD documents(1) indicates:

i) school buildings, particularly among the oldest stock, may no longer be suitable to the new working environment of teachers;
ii) the teaching staff continues to be harassed by so-called routine jobs;
iii) the service obligations of secondary teachers, in most Member countries, continue to be calculated on the basis of a certain number of lessons of the traditional type to be given;
iv) as a result, teachers who have to modify their teaching practice have to cope with increasingly crushing tasks.

The Experts' views on these four factors are reported below.

a) The Experts thought that attention should be given to encouraging school design, architecture and teaching materials and techniques favourable to new teaching tasks and working conditions.

The architecture of schools and teaching materials and techniques, including audio-visual materials, are having an impact on teacher tasks and working conditions. To some degree this has been discussed previously under the heading "creating a favourable environment for change through buildings, facilities, and teaching materials". However, some additional quotations from the experts' papers may focus particularly on the effects of school design and teaching materials on teacher tasks.

B. Rodhe and B. Gran,(2) speaking of the open plan schools, say:

"Thus the facilities and areas of various kinds which we have visited serve the purpose of offering space for manifold experiences for the children: through books and other printed material, through sound and pictures, through people, through discovery and creative activities, in drama and music. There is a conscious effort to overcome the traditional verbal dominance of the school, the more important as one third of the pupils have a mother tongue other than Swedish. There is careful and precise planning behind project work of the kind we have been watching. Teachers of varying training

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1) Topics for discussion at the Conference on teacher policies, op. cit.

2) B. Rodhe and B. Gran, op. cit.

work and plan together, making it possible to vary the size of pupil groups, as teachers of immigrants and of special classes join with class teachers in planning and working, also using various aids and modes of work."

A.L. Hyer and R.M. McClure,(1) in their discussion of schools without walls, comment:

"Growing from the same traditions as informal education is a relatively new phenomenon on the American Educational scene, schooling without a building... Obviously, there is a tremendous difference in the tasks of the teacher in a setting such as this. He must, as required, help students articulate their needs. On other occasions, the teacher acts as a guide to those resources which help students meet their needs - sometimes filling that need himself but often finding other sources of help. And the teacher must also be an independent observer of the student, acting as a friendly critic and counselor for the future."

Finally H. Kiesling(2) discusses the relationship of technology to role:

"...there is for the first time the possibility of substituting non-human instructional devices at lower cost than the traditional teacher in the self-contained classroom.
"The employment of educational technology envisioned here is that termed by Hyer "Level Two" usage, where media are substituted for some functions performed before by the regular classroom teacher. Now the master teacher not only directs the members of his team in human teaching roles, he must decide when and how he will employ non-human instructional devices. Thus the level of expertise required of this person is considerably greater than when there is no technology present, because now he must not only be very well informed concerning the specialised skills and capabilities of his or her staff members, but also have a good command of the strengths and weaknesses of technological instructional methods, including technical aspects, strengths and weaknesses of media types for different instruction aspects, and costs."

b) The experts said that we seem to be moving from the image of the teacher as a mature, adult model for students to the image of the teacher as a manager of a learning environment with options to choose among and decisions to make. The roles the teacher has played in the past, however, must continue to be provided for. In discussing how both the old and new teacher roles could be accommodated, it was pointed out that other professions, such as dentistry and medicine, have accomplished this through the use of ancillary personnel and while doing so have been able to maintain professional autonomy. Some useful experiments have been conducted along these lines in education as well.

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1) A.L. Hyer and R.M. McClure, op. cit.

2) H. Kiesling, op. cit.

As we have seen in a previous section, there is an increasing use of auxiliary aides to the teacher. Such employees cause changes in teacher tasks, particularly by relieving the teacher from routine chores. A few quotations from the paper by B. Rodhe and B. Gran(1) will enlarge upon the documentation in the earlier section.

"Taken together this means much more of a management role within the school. For many teachers this has been a positive trend, for others not. Perhaps it has created a stronger polarisation within the school between those who take responsibility for such planning, administration and co-ordinating activities and those who do not.
"In those projects which have been centered upon method-material programmes, there has been a feeling of having too low a level of responsibility for educational work and more responsibility for administrative routine work. When these method-material projects have been combined with flexible grouping and team-teaching this feeling of having too much routine work has mostly been cancelled out, because it has been possible to use teacher assistants and clerical aids (cf. IMU).
"This entire development of differentiation of the school's functions has divided the responsibility for the tasks of the school between many types of personnel within the school (VGT, PEDO, IMU etc.). At the same time this differentiation has not meant that the responsibility for certain functions has been taken away totally from the teachers. This is a difficulty for the teacher. It very often means responsibility but a shared or even differentiated job.
"The introduction of new types of personnel into the school staff is not the only process of differentiation. There has also been a differentiation of functions between the teachers..."

c) Many countries have legislation or regulations governing the distribution and use of the teacher's working hours. These may conflict with or curtail the flexibility needed to respond effectively to new teacher tasks and school organisation. The regulations may be expressed in terms of a certain number of lessons or classes taught per day or week or the number of contact hours with students. This may restrict use of teacher time for management, participation in planning and decision making, participation in in-service education activities, work with parents and community groups, and the like. There are also, as in the case with England, adverse regulations pertaining to the responsibility of teachers for students working independently or for students while on field trips.

Many part-time teachers are used in Europe. Experience in Sweden was reported which indicated that part-time employment did not interfere with planning and team work roles required in innovative programmes.

1) B. Rodne and B. Gran, op. cit.

The discussion of restructuring of service obligations of teachers is closely related to a topic discussed previously under the sub-heading, "Removal or Alteration of Negating Policy Regulations". The following additional citations may be useful:

"The emerging new patterns for teacher tasks have formed the basis for policy measures taken on central as well as on regional and local levels. However, to a great extent they still pose problems which have to be tackled and studied, and possibly will also lead to further policy measures. The possibilities of certain measures are at present being studied by major governmental committes.(1)

"Until recently, these extra-curricular activities supervised by teachers were considered a part of the teachers' assignment. Lately, there has been a trend toward either reducing the assignments during the regular school day for teachers so assigned or paying extra for the 'overtime'.(2)

The Committee ULA(1) was set up with the task of examining the working conditions of teachers in both the old and the new types of schools, the subject being to determine whether the school reforms would result in an increase in the teacher's working time. The findings, in fact, confirmed an increase but the total working time still fell below the legal forty-hour work week for other officials in Sweden. In consequence, the findings of ULA's research did not lead to changes in the working time for teachers."(3)

d) K. Bodell, D. Pidgeon and B. Gran were among those expressing concern for the increasing intensity associated with the new teacher roles. There may be a need to lessen contact hours with students and/or alternate such with less intensive teaching tasks. Teachers' unions are beginning to negotiate for working conditions and overtime pay for "extra" assignments. The problem is how to reduce "intensity" of teacher work and still reach reasonable cost effectiveness levels.

Previously the teacher operated within a private, closed environment which determined to a great extent its own pacing and pressures - the "intimacy model". Adding other adults to the classroom raises the intensity level particularly since these new roles are so highly visible.

Innovations tend to exert wear and drain on teachers. Sometimes they create a hyperactive teacher who burns himself out. Sometimes the teacher is able to adjust by using students, ancillary aids, and becoming more passive himself, staying in the background and co-ordinating the work of others. All experts agreed that more study is needed of methods of adjusting the role, the functions and the tasks of teachers so as not to increase the intensiveness of their workload.

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1) B. Rodhe and B. Gran, op. cit.

2) A.L. Hyer and R. M. McClure, op. cit.

3) K. Bodell, op. cit.

The paper by K. Bodell on the working conditions of teachers in Sweden deals in depth with the changing working conditions due to innovations in Sweden and emphasizes the increasingly crushing tasks which face the innovative teacher. Several highlights from K. Bodell's paper are included below followed by brief quotes from others:

"The teaching activity was further broken down into some 37 per cent for lessons, 24 per cent for planning, preparation and follow-up work and 13 per cent for written work. Thus it was discovered that roughly half of the time devoted to teaching was used for educational work other than giving lessons. It may be concluded, therefore, that the only effective way to reduce the teachers' work is to rationalise the work related to teaching itself. Proposals to transfer some of the teachers' administrative tasks to other staff members will, in fact, save only very little time...
"The results of the ULA survey showed that the teachers' work in the three upper grades of the comprehensive school had increased by one or two hours per week when compared to those in the former lower secondary school...
"In the plan of instruction for the comprehensive school, great importance has been given to the planning of teaching. ULA found that the teachers used only between one and two per cent of their working time for long-range, comprehensive planning; most planning was directed towards the next lesson...
"The syllabuses which define goals and guidelines for the comprehensive school emphasize the importance of contacts with pupils and parents. It may be somewhat surprising, therefore, that teachers spent only 20 hours per year on contacts...
"ULA also surveyed the time devoted to studies and further instruction. It was found that teachers studied for a total of three to six hours per week between two and three hours in relation to their mastership and as many as four hours on other work. If these figures seem high, it must be remembered that the comprehensive school was a new type of school with new goals and new curricula."(1)

"In general, teachers appear to have shown a consistency in two respects, with regard to their views about class size. In the first place there is almost universal agreement that large classes "are exhausting, a cause of frustration, and a reason for failure in basic subjects" (Fleming, 1959) as well as a source of dissatisfaction. (Rudd & Wiseman, 1962)... Put in very simple terms, the main argument, for both teachers and parents, rests on the assumption that with small classes there is less strain on the teacher and he can give more attention to individual pupils. This results in increased achievements for the class as a whole and the teacher's efficiency is thus improved."(2)

"Teachers who have been a part of differentiated staffing tend to be convinced by the rationality

1) K. Bodell, op. cit.

2) D. Pidgeon, op. cit.

of flexible staffing although only 74 per cent wish to work in a school where there is shared planning and direction of classroom instruction."(1)

It is also important to note how these changes were felt in the Malmö experience.(2)

"From a teacher's diary, spring term 1973:
Sometimes I do wonder if it wasn't easier before, when one knew which pupils and which classes to meet every day. One knew what subject to teach and which book to use. There was law and order. Sometimes there were complications: one entered the storeroom at the same time as a colleague, looking for the same map or the same book-box. Then one suspected that something was going on in the adjacent room and that that 'something' might be connected with one's own work. After nine years of experimentation with co-operation in various forms, it has now gone so far that one can hardly do anything on one's own. One has grown dependent not only on colleagues but on teachers' assistants and on pupils, in a way that could not be foreseen when it all started in 1964. The relationship towards the school administrators and the caretaker has also altered. It feels as if walls have fallen down and borderlines been erased. The borders between different subjects have disappeared to a great extent. At least the colleagues of my teaching-team have long since stopped putting subject-labels on the study project of our year plan for social orientation subjects. It's impossible to compare the old and the new way of working. The work is much freer now."
"...Taken together this means much more of a management role within the school. For many teachers this has been a positive trend, for others not. Perhaps it has created a stronger polarisation within the school between those who take responsibility for such planning, administration and co-ordinating activities and those who do not.
"In those projects which have been centered upon method-material programmes, there has been a feeling of having too low a level of responsibility for educational work and more responsibility for administrative routine work. When these method-material projects have been combined with flexible grouping and team-teaching this feeling of having too much routine work has mostly been cancelled out, because it has been possible to use teacher assistants and clerical aids (cf. IMU).
"In the beginning, projects concerning co-operation between school levels, team teaching, open plan schools,etc.,very often add to the teacher's tasks and make them more difficult, which in some cases gives rise to opposition against the innovation process. A positive attitude to the innovation is necessary if it is to turn out a success."

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1) A.L. Hyer and R.M. McClure, op. cit.

2) B. Rodhe and B. Gran, op. cit.

V. NEW APPROACHES TO CLASS SIZE AND QUALITY OF EDUCATION

Many school improvement projects examined by the experts focused on new ways of looking at questions of pupil/teacher ratio. These included the increased value being placed on students working independently, new approaches to grouping of students for instructional purposes, and the support brought to the instructional setting by aides of various kinds and media. Two aspects are summarised below - class size and pupil performance and alternatives to the reduction of class size.

a) Much of the research does not support high correlation between low class size and pupil performance (as judged at least by the results of standardized achievement tests). The consensus of the experts was, however, that actual decisions about class size should be based much more on the nature of the learning task and the teaching method to be employed. Many classes are presently too small for optimum use of the resources available to schools; Others are abysmally large given the personal or individual nature of what is trying to be accomplished.

D. Pidgeon's paper in the annex to this volume deals in depth with class size and pupil performance, opinions, views, and research studies and analysing the factors that intervene in the relationship between class size and pupil performance. The other experts tend to agree with the conclusions reached by D. Pidgeon. The following quotes will illustrate the nature of his conclusions:

"The main conclusion to be drawn from research in this area is not that class size does not matter, but that both teachers and administrators must recognise that there is no universally "right" size for any class.

"The research reviewed, however, has made it clear that small classes are only advantageous when teachers adapt their approach to suit the new conditions, and adopt methods involving more independent learning and greater pupil/teacher interaction...

"Again, research has indicated that teachers do not automatically make changes in their methods given a small class and, hence, appropriate training, both at the initial level and in-service, becomes a necessity...

"There are two aspects, however, which need to be stressed; these are that different methods are best suited to different sized groups, and that the newer methods and approaches which emphasize learning rather than teaching, necessarily require small classes.

"A review of the relevant research reveals that 'class size' can be a misleading concept. It is influenced by the ratios of pupils to teachers, and by the . of hours of teaching received to the teaching load, and all these vary under different

circumstances within and across different education systems. Moreover, in the 'traditional' classroom situation, such factors as the degree of homogeneity of the students, their age level and social background, the subject being studied and the space needed, all assume some degree of importance. It becomes clear, however, that it is what actually happens in the classroom - that is, the methods, approaches and techniques used by the teacher, including the use of semi-qualified assistants - which determines the 'quality' of the teaching/learning process, and hence directly influences the number of pupils it is desirable to involve at any one time."

b) If the demand for teachers is freed from the class size formula and a teacher/pupil ratio adopted, several innovative staffing patterns become more feasible. Some objectives can be achieved as well with large groups as with small ones; and some teaching methods are no more successful when used with 15 or 20 students than with 40 or even 100. It is only rational, therefore, to vary class size in accordance with the objectives and the teaching/learning methodology to be employed. Lectures, television or motion pictures are adaptable to large groups; when group interaction is important groups smaller than normal class size are usually more desirable; some learning goals are accomplished best by independent study.

In the case of the Marly-le-Roi experiment, J. Poinssac(1) concludes that:

"the concept of the class with a maximum number of pupils has ceased to have any day-to-day significance, and has given place to other organisation norms imposed by the machines. Students are grouped in accordance with the various teaching functions; they may be collected in a whole age class (which may represent 190 pupils), an average-sized group (20 to 25 pupils) or a small group (4 to 5 pupils)..."

Some consideration has been given to further changing employment guidelines by considering adults to pupils rather than teachers to pupil ratios. This would allow the inclusion of certified support staff such as counselors and reading specialists as well as non-certified ancillary personnel. It might result in a considerable reduction in the size of student groupings at no increase in cost. Teacher unions, however, are very wary of explorations of this type because of the dangers of lowering standards and of diluting the teaching profession.

Almost all the cases described in the experts' papers deal with innovations that to some degree offer alternatives to the reduction of class size. Previous sections of this summary have dealt with alternatives such as the use of ancillary aides, independent study by students, use of new media and instructional resources, peer learning, and use of various sized groupings of students depending on the nature of work (large, medium, small,

1) J. Poinssac, op. cit.

and independent work). A few additional annotations are cited here to round out the summary of various alternatives to the reduction of class size:

"In the differing context of a reformed education system stressing independent learning, the concept of class size per se could become irrelevant, and efficiency increased, not just by employing more teachers, but by introducing changes into the organisation of the system - including, perhaps, an extended use of teacher aides - and by improving, through appropriate training, the quality of the teaching force.(1)

"The redeployment of personnel referred to is related to the large group television viewing mode in use in junior and senior high schools. One example is cited:
"... a junior high school teacher formerly taught five sections of thirty pupils - 150 pupils - every school day. This same teacher might now have during the first period of each school day, 120 pupils (or four sections of thirty) in an auditorium for a large-group television lesson. During the remainder of the day he might meet each of these four sections, one by one, for classroom work. Thus, at the end of the school day, the teacher has, in effect, taught eight sections, whereas before he taught five; and yet his work load is lighter, because he grades and keeps records on only 120 pupils instead of 150. Television thus makes this teacher the equivalent of one and three-fifths "pre-television" teachers.(2)

"By 1960, these had developed into an innovative strategy commonly known as the Trump Plan which promoted new ways of organising students and teachers to accomplish the teaching/learning tasks. The thrust was to utilize variation in size of student groups depending on the nature of the learning task - large groups, small groups, and independent study - accompanied by flexible scheduling (variable time allotted per learning task). Today, NASSP is continuing its leadership in programme refinement and implementation strategy in what is called the NASSP Model Schools Project involving 34 schools."(2)

"Thus, while technology-using strategies would require fewer teachers, the remaining ones would be treated to a better standard of living."(3)

"Reference has already been made to the fact that the general resources of an education system may be deployed either by increasing the number of trained teachers - and thus reducing class size - or by providing other non-teaching personnel, such as administrators, guidance counsellors, librarians, etc., keeping class size relatively constant. The use of a measure such as 'numerical staff adequacy' as suggested by McKenna (1965) to replace class size or Pupil/Teacher ratio assumes, of course, that the total efficiency of an education system would be about the same in either of the two situations. There does not appear to exist any empirical research

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1) D. Pidgeon, op. cit.

2) A.L. Hyer and R.M. McClure, op. cit.

3) H. Kiesling, op. cit.

evidence to support this contention, and while few teachers would denigrate the importance of auxiliary personnel operating, for the most part, outside the classroom, most would be ready to support the argument that if the number of teachers could not be increased in order to reduce class size, an improvement in efficiency might be achieved by seeking alternative methods of utilising the capabilities of teachers, or by supplying ancillary help within the classroom."(1)

Here we have two interesting findings. The teachers express a need for self-instructional and near self-instructional teaching aids. When they get it, many teachers hesitate to use it. They find it not suitable for their instructional methods or for the needs of their pupils. On the other hand many teachers have found out that teaching aids which are easy to handle by the pupils give more time for the teacher to work in close personal contact with small groups of children and with children who need special help.(2)

VI. POLICY RECOMMENDATIONS AND CONCLUSIONS

It would appear that governments will continue to pursue five goals in regard to their schools:

1. A prolongation of education for all
2. Equality of opportunity
3. Expanded goals for education
4. A more open and democratic educational system
5. Maintenance of or an increase in the quality of education.

To implement these goals, using the system of schooling common to most countries, would produce significantly higher costs. Such costs would come at a time when governments appear not to wish to devote a larger percentage of their Gross National Product to Education. The search for alternative ways of achieving school improvement goals characterises, then, many of the reports discussed in this paper. Although the evidence is inconclusive, there are promising directions which, in the opinion of the experts, deserve further consideration. The summarisers of the papers and the discussions recommend, based on the available data, that the attention of government policy makers could profitably be centered on the following areas:

1. A Systems Approach

Education is a complex system with interdependent parts; when one part changes, another must change. A change in the role of the teacher is only part of the total process of change. Also, education is an equilibrium-seeking system. Therefore, it tends to nullify change.

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1) D. Pidgeon, op. cit.

2) B. Roche and B. Gran, op. cit.

There are also hierarchical levels within the education system such as (a) the policy level; (b) the structural arrangements level; (c) teachers and their prospective; and (d) pupils and their prospective. Change can be introduced at any one of these levels but the result may not be the same at other levels. Therefore, we must monitor or obtain feedback and readjust the innovation in order to keep it on track.

Education is an open system and, therefore, inputs from society and from the environment also have an effect on the education process. All of these elements must be worked together into a system which supports a desired change. Much study needs to be conducted on this process.

2. Change Strategy

Attention could very well be given to investigations of the strategy of change as it applies to education. Considerable recent research has been devoted to this but relatively little to the application of what is known to problems of educational change.

3. Field Testing of Innovations

Too frequently, innovations are prematurely introduced or promoted on a large scale. Innovations should be researched and field tested in a limited setting over a reasonable period of time before wholesale introduction and/or promotion is undertaken. Not all innovations will succeed in new settings; some are not transportable.

4. Flexibility

Innovations are frequently hampered by rules and regulations both within individual buildings and from agencies outside the school building. Flexibility is required for creative innovation to take place.

5. Overcoming Insecurity of Teachers

Insecurity frequently stems from a fear of not being or feeling adequate for new responsibilities. Part of this insecurity can be overcome if governments provide adequate in-service education support before innovations are undertaken and during the early stages. This support should be offered at the request of and in accordance with expressed needs of teachers, be free of financial burden to them, and conducted as a part of their regular workload.

Insecurity can also result from fear of an increased workload. In a study done in Sweden, this fear was overcome by a study conducted jointly by the teachers' union and a government research agency.

6. Involvement

Teachers resist being "done to". They need to be involved in the research, planning and implementation of educational change. The teachers need to be agents of change, not used or manipulated in order

to get change to take place. The problem of teachers' unions is important in relationship to educational change, especially with the oversupply of teachers in many places. Where shortages of teachers now exist, certain staffing changes should be introduced before an oversupply of teachers occurs.

7. Incentives

Governmental agencies could devote attention profitably to the creation of incentives that support and encourage change in the teaching profession. Among topics that might be investigated would be: relief from routine tasks; methods of relieving "tensions" which develop under innovative circumstances; improvement of the status of teachers; advancement opportunities; enhancing pupil achievement; and the utilization of teachers as agents of change.

8. New School Objectives and Staffing Patterns

Staffing innovations have grown out of the adoption of new goals for the school. Seldom, it would seem, are changes in staffing patterns a primary aim of an innovation from the outset. Therefore, if a change in staffing patterns is the primary aim, it might be more acceptable if it were coupled with school reform and/or new goals, thereby fulfilling "needs reduction" of teachers. Such an approach to innovations in staffing patterns might tend to make teachers feel more productive rather than making them feel less needed.

9. Facilities to Support Changed Roles

Changes in school architecture and other environmental conditions tend to cause changes in the attitudes and methods of teachers. These changes also have a tendency to relieve pressures on teachers by making it more convenient for them to perform new roles.

10. Teaching Materials

Governments can support innovative patterns of education by underwriting preparation of needed new types of teaching materials too expensive or time-consuming for preparation at the local school site.

11. Class Size

Governments should investigate and support alternatives to the "class size" concept; e.g., use of student/teacher ratios. Studies of numerical staffing needs should always relate teacher needs to learning needs and goals because some types of objectives cannot be achieved in large class settings.

12. Financing of Education

Governments could refocus the study of financing of education, moving from concerns with productivity and cost effectiveness to an attempt to raise quality and to refocus goals. Attempts should be made to attain this increased quality at the same level of GNP. It

should be kept in mind, however, that the welfare of the child must remain uppermost when introducing change. Innovations that may be productive to explore are: new staffing patterns, especially use of ancillary aids; retraining of teachers; incentives and rewards for teachers; maintaining an "appropriate" climate for change; use of media and technology; and introduction of career ladder concepts into education. Governmental agencies should keep in mind that a frequently stated goal of education - individualisation - is a costly one to attain.

Annex

CLASS SIZE AS A FACTOR OF PUPIL PERFORMANCE
A POLICY ANALYSIS

by

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SUMMARY

Because of its importance in determining administrative policy an attempt has been made in this paper to resolve the apparent conflict which has been revealed between most teachers' views about the need to reduce the size of their classes in order to increase efficiency, and the results of much research which has demonstrated that student achievement is either not related to class size, or is higher with larger classes. The findings of both early experimental studies and later survey researches have been examined and those factors which intervene in this simple relationship have been isolated, so that their practical influence can be assessed. The implications of this analysis are then considered in the light of changes now taking place in the process of education itself, particularly with regard to the role of the teacher.

A review of the relevant research reveals that "class size" can be a misleading concept. It is influenced by the ratios of pupils to teachers, and by the number of hours of teaching received to the teaching load, and all these vary under different circumstances within and across different education systems. Moreover, in the "traditional" classroom situation, such factors as the degree of homogeneity of the students, their age level and social background, the subject being studied and the space needed, all assume some degree of importance. It becomes clear, however, that it is what actually happens in the classroom - that is, the methods, approaches and techniques used by the teacher, including the use of semi-qualified assistants - which determines the "quality" of the teaching/learning process, and hence directly influences the number of pupils it is desirable to involve at any one time.

A number of reasons for the contradiction between teachers' views and research results are discussed, and it is suggested that the traditional methods by which a teacher passively imparts knowledge to whole classes are likely to be equally effective over a fairly wide range of class size. Many teachers with large classes tend to restrict their curriculum, often to the limited group of subjects more amenable to measurement in research studies, while many others with small classes fail to adapt themselves to the advantages offered and continue with mass methods of instruction. Even where changes to new types of classroom organisation and new methods are made, these are often not accompanied by necessary changes in teacher attitudes and beliefs.

It emerges, therefore, that in the study of class size - as with many other aspects of educational organisation - increased efficiency is much more dependent upon improvement in the quality of the teaching than it is upon changes in the prevailing material circumstances. There is no universal law governing an acceptable size of class. It is argued that a move towards smaller classes is, in the long run, largely dependent upon the policy adopted by an education system. If the more traditional methods of group instruction are to be pursued - and teachers trained accordingly - little will be gained by reducing classes below 30-40 and they could be even larger. On the other hand, if it is an acceptable tenet of a system that learning is more important than teaching and that methods involving a greater interaction between pupil and teacher are both necessary and desirable, then a considerable reduction in class size would seem inevitable.

It must be noted, however, that in general the running costs of an education system are directly related to the number of fully trained teachers employed, and that to produce a reduction in class size by simply increasing the supply of teachers, without taking the necessary steps to change the educational methods employed and to improve the quality of teachers, particularly in relation to their attitudes and beliefs, could be both uneconomical and ineffective. In the differing context of a reformed education system stressing independent learning, the concept of class size per se could become irrelevant and efficiency increased, not just by employing more teachers, but by introducing changes into the organisation of the system - including, perhaps, an extended use of teacher aides - and by improving the quality of the teaching force through appropriate training.

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I. INTRODUCTION

There is little doubt that the question of class size is a matter of major concern to both educational administrators and to teachers, and this concern is not lessened by the fact that their subjective views on the issue are diametrically opposed. The former, aware that a large proportion of a country's total educational budget - usually exceeding 50 per cent - is spent on the salaries of teachers and other personnel, appreciate that the greater the number of pupils that can efficiently be taught by one teacher, the lower will be the total costs of running the system. Most teachers, however, whether they teach at the primary, secondary or tertiary level, are convinced that smaller classes must inevitably lead to higher standards of attainment.

Class size being such an important matter, therefore, it is not surprising that documented research on it goes back over 70 years. Like the question of ability grouping, however, the research carried out has more often than not obscured the real issues and, as a result, conflicting evidence has been produced. The research situation has been even more confused by the fact that the dramatic changes in the teaching/learning situation which have been developing in recent years have added a new dimension to the problem - so much so that the very concept itself no longer appears to have any real meaning.

A consideration of the research evidence is nevertheless important, mainly because it helps to focus attention on all the relevant dimensions of the problem. It is not always appreciated that one of the main functions of educational research is to help clarify the issues involved and to provide a greater understanding of the problem being investigated; it is only rarely that research supplies definitive answers.

The study of class size has one further interesting aspect. Whatever the results of research have been, it would appear that they have had little if any influence on the actual size of classes in any education system. Rather, the number of pupils taught by a single teacher, or the ratio of teachers to pupils, would appear to depend almost exclusively upon social and economic factors operating within the system. The question of the size of the education budget is clearly important, but the differences which exist in the average size of classes, both between and within developed and developing countries,

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show that other, non-educational factors must also be exerting a strong influence.(1)

It is the aim of this paper to attempt to unravel some of the complications associated with this important problem. Various aspects are discussed and a brief review of some of the relevant past research studies is undertaken in order that the many factors related to the subject can be viewed in appropriate perspective. The implications of this analysis are then considered in the light of changes now taking place in educational practices involving pupil-teacher relationships, and suggestions are made regarding ways in which this problem might now be considered in terms of determining teacher utilization and calculating personnel needs.

II. OPINIONS AND VIEWS

There would appear to be three basic reasons which might seemingly have been responsible for determining the actual size of a class, or the number of pupils "taught" by an individual teacher; these are the views and opinions of knowledgeable people or educational experts, the results of research into the subject and the economic and administrative factors which operate in any education system. It might be claimed that each of these three has, in different education systems, exerted some influence at one time or another, although it is very difficult, if not impossible, to even venture an estimate of the extent of the influence. One of the main reasons for this - at least as far as expert views and the results of research are concerned - has undoubtedly been the fact that there has been far from universal agreement about what the answer should be.

Informed opinion has by no means been consistent. Writing in the 17th century, Comenius argued strongly for the very large classes of several hundred pupils. His view was that not only would this cause the teacher to take a greater interest in his work, which would lead to greater enthusiasm amongst his pupils, but, having many companions around them would be more pleasurable for the pupils and would stimulate them to assist one another. (Keatings, 1876). Few teachers today would subscribe to Comenius' first point, but, while the concept of what constitutes a large class has changed considerably over the intervening years, there has been some support from recent research for Comenius' argument about stimulation, and against classes being

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1) Werdelin I. (1970) discusses the many factors contributing to the relatively low efficiency of primary education in Iraq, despite the low student/teacher ratio of only about 22.

too small. Burstall (1970) observed the teaching of French in English primary school classes ranging in size from 3 to 49. In the very small classes a stimulating atmosphere "proved very difficult to sustain", and those containing less than 20 pupils showed a tendency for "less improvement in fluency than those containing 20 pupils or more". Comments such as "The group is too small and so lacks vitality" and "The children seek safety in chorus answers" were often reported.

Similar views about too small classes in primary schools were reported by some of the witnesses giving evidence to the Plowden Committee in England (Central Advisory Council for Education, 1967). Several stated that classes of "fewer than 15 to 20 did not provide sufficient stimulus for teacher or children besides making obvious difficulties for physical education, music and drama".

In general, teachers appear to have shown a consistency in two respects, with regard to their views about class size. In the first place there is almost universal agreement that large classes "are exhausting, a cause of frustration, and a reason for failure in basic subjects" (Fleming, 1959)(1) as well as a source of dissatisfaction. (Rudd & Wiseman, 1962). Secondly, agreement as to what constitutes a "large" class has changed considerably over the past half century or so, and roughly parallels the lowering of authorised and actual enrolments in schools in Western Europe and the United States. Fleming quotes figures for England to show that the optimum size of class that teachers thought most desirable was fairly regularly reported to be about 3 to 5 pupils less than the average size of class with which they actually had to contend, and she quotes a fall in "desired" size from 35 - 40 in 1929 to around 25 in 1949.

Agreement among parents about the desirability of small classes is even more strongly established than among teachers. It is certainly one of the main reasons for the choice of private or independent schools. In England for example the average number of pupils to teachers in private schools is less than half that in maintained schools (Central Advisory Council for Education, 1967).

Put in very simple terms, the main argument, for both teachers and parents, rests on the assumption that with small classes there is less strain on the teacher and he can give more attention to individual pupils. This results in increased achievements for the class as a whole and the teacher's efficiency is thus improved. The educational administrator, of course, wants to know whether this assumption is true or not, for if it can be demonstrated that teacher effectiveness is, within certain limits, relatively uninfluenced by a reduction in class size, then there is clearly no inducement for him to increase the costs of operating the education system by making classes smaller.

Unfortunately, as will be shown below, this simple statement of the situation begs a large number of questions, although a great many

1) Refer to References p. 115.

researches have been carried out in order to test this supposedly simple relationship between class size and teacher efficiency.

III. BRIEF REVIEW OF SOME RESEARCH STUDIES

The first experimental investigation was that carried out by J.M. Rice in 1902 in which he related the performance of some 6,000 children in grades four to eight on specially devised tests of arithmetic to differences in a number of independent variables including size of class, amount of instruction time, method used and age of the children. Contrary to expectation, he found no direct relationship between any of the variables studied and school performance. Repeating the same experiment the following year only using a test of language instead of arithmetic produced the same result. He concluded "It has always been supposed that the size of the class must necessarily exert a powerful influence on the results. But investigations showed that there was no relation between size of class and the results, that some of the best work has been done in the largest classes, and some of the poorest in the smallest classes". (Rice, 1915).

Blake (1954), following a careful analysis, reported that Rice's studies did not meet criteria of scientific rigour. Nevertheless Rice's findings attracted considerable attention at the time and many other investigations of class size were undertaken in the ensuing decades. Butsch (1934) cites 205 references, and Otto and Von Borgersrode (1941) 267, giving some idea of the importance attached to the subject at a time when school enrolments were increasing at a rapid rate both in the United States and in Europe. There is little doubt that many of these studies were poorly designed and executed and little reliance could be placed on any conclusions they produced. Blake, in the study cited above, examined these 267 published researches, applying six criteria of scientific adequacy, and reported that only 22 met the necessary requirements. Exactly half of these, 11, used some achievement measure as the criterion, and of these five favoured small classes (Anderson, 1950; Lundberg, 1947; Wasson, 1929; Whitney & Willey, 1932; Winfield, 1931); three favoured large classes (Eastburn & Garretson, 1937; Smith, 1931; Stevenson, 1925); and three were inconclusive, (Eastburn, 1936; Ewan, 1934; Metzner & Berry, 1926). The other 11 either used teacher or administrator opinion as the criterion variable, or some aspect of class activity or teacher practices, and, in all cases, small classes were found to be superior.

Most, if not all of these early studies were designed and conducted specifically to test hypotheses relating class size to pupil performance or some other relevant criterion. Typically, experimental and control groups of different sizes were established, with teachers

continuing to use the techniques, methods and approaches they themselves preferred to teach the criterion subject for a set period of time - usually one term or semester. Fleming (1959) gives another excellent review of studies carried out up to the early fifties and points out the inadequacies which almost invariably led to the production of inconclusive results, including any consideration of such factors as class homogeneity, teacher quality, method, and pupil-teacher relationships.

More recent studies have also failed to resolve the issue, almost certainly for the reasons given by Fleming. Frymier (1964), for example, carried out a controlled experiment with first graders, comparing classes of less than 30 with those of more than 35, and found that, although initially the pupils in the larger classes scored significantly higher on a test of reading readiness, after some six months of instruction, those in the smaller classes were advanced in reading achievement. Using data collected from London children, however, Little (1971) showed that children in smaller classes appeared not to have any advantage over those in larger ones.

Research into class size has not been confined to specially designed investigations. Taking advantage of the usually very much larger numbers involved, class size (or some other variant of it) has often been included as an additional independent variable in both national and international surveys. In most cases studies of this kind have employed pupil/teacher ratio as the operative variable rather than size of class, and as this brings other factors into consideration, it is necessary to make a few comments about this issue before giving some of the results of the survey studies.

For the individual teacher, the size of his class, that is the number of pupils grouped together for instruction under his supervision alone is clearly the important issue, but it is not necessarily so for the administrator. There are other factors besides the total number of pupils and teachers in a school which influence class size per se; the number of hours of teaching received by pupils and the number of classes per week that a teacher appears before (the teaching load) are also clearly important. In general, the relationship between these various factors might be demonstrated by the following.(1)

$$T = f(P, t, h, c)$$

where

T = Number of full-time teachers.

P = Number of full-time pupils.

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1) The writer is indebted to L. Goldstone, Chief of the Division of Statistics in Education at UNESCO, for the analysis given here.

t = Average weekly teaching load per teacher.

h = Average weekly number of hours received by pupils;

c = Average class size.

The form this relationship takes may, of course, vary, but a simple and reasonable specification of it will give the following expression for class size:

$$c = \frac{P}{T} \cdot \frac{h}{t}$$

This simple formula illustrates that the ratio of hours of teaching received by pupils to the teaching load of the teachers is as important as the pupil/teacher ratio in determining actual class size. At a particular level of education within any one country or education system, the factors in the above formula will remain relatively constant. But they will vary across different levels, for example between primary and secondary schools. It will also be noted that the average size of class will increase as the average teaching load gets smaller relative to the hours of teaching received by the pupils. Where teachers take on additional non-teaching activities class sizes will inevitably rise. As Bedford (1973) has recently pointed out, when good, experienced, ambitious teachers within any given school take on non-teaching duties this means that it is the young and inexperienced teacher who finds himself with a greater teaching load and larger classes.

The use of the pupil/teacher ratio for making comparisons across countries can be very misleading, since, as the above formula indicates, this ratio can remain constant and yet large variations in class size can occur when accompanied by changes in the number of hours' instruction received by pupils, or by the teaching load, or both. There is also variation in the ways in which different countries produce the pupil/teacher ratio; some will include non-teaching Heads or Principals, while others do not. A great deal of care must be taken in interpreting any data using this ratio as a substitute for class size.

While the actual size of class is the important variable so far as the individual teacher is concerned, there are still other factors which have to be taken into account by educational administrators spending public money. As Vincent (1969) points out, finance devoted to school personnel can either be concentrated on teachers, thus decreasing the size of classes (assuming other factors are held constant), or it can be spread over other non-teaching personnel such as administrators, guidance counsellors, librarians and others, who must undoubtedly have some effect upon the total educational enterprise. It may well be argued, therefore, that a measure of class size is not in itself a suitable measure of staff deployment. McKenna (1965) derived a measure of "numerical staff adequacy" (NSA) to replace pupil/teacher

ratio or class size, and defined it as the number of professionals of all kinds employed per 1,000 pupils. It is already becoming clear that class size obviously suffers from a number of deficiencies, yet, because both it and pupil/teacher ratio have been used in many large-scale studies, it is necessary to consider the results obtained, even if they must be viewed with some caution.

One of the major advantages of using large-scale survey data is the fact that because large numbers of pupils and schools are involved, such things as differences in teachers and methods are randomised. The major disadvantage, however, is the fact that the school is very often the unit of analysis and within school differences are averaged with a subsequent loss of relevant information. The 1947 Scottish Mental Survey (Maxwell 1958) involved the administering of a test of general mental ability to all pupils aged eleven years - some 70,000.

Using pupil/teacher ratio as a measure of class size, no precise relationship relationship was shown to exist between average test score and this ratio. Table 1 gives the figures obtained for schools with ratios falling within specified ranges. No statistical significances were reported.

Table 1

Test Score	School P/T Ratio
38.11	10 - 19
37.21	20 - 29
36.46	1 - 9
36.32	30 - 39
36.12	40 - 49

It might be supposed that either the very large schools in cities, or the very small schools in rural areas, might produce higher test scores. While this was true - very small schools of fewer than 20 pupils scoring 38.09 and very large schools of more than 900 pupils scoring 37.97 - there was no evidence that the few large schools in cities with pupil/teacher ratios of more than 50 performed significantly better or worse than the others.

In the longitudinal study of a representative sample of approximately 5,000 children born in the United Kingdom during the first week of March 1946, and followed up in the National Survey of the Health and Development of Children (See Douglas, 1964), a number of tests were administered to the children concerned at the time of their eighth birthday, and data on the size of the class they were in were also obtained. Table 2 gives the results.

Table 2

Test Score	Class Size
53.33	2 - 19
51.70	20 - 29
51.28	40 - 49
50.75	50 - 58
50.33	30 - 39

Analysis of the data showed a significant relationship between the superiority of small classes and the type of school attended - nearly all the schools with classes under 20 were in the private sector and their higher scores may be as much attributable to the better schools as to the smaller classes. The significant difference between classes of size 40 - 49 and 30 - 39 may be explained by the fact that most primary schools at that time (1954) in England were "streamed" for ability, and there was a universal tendency for the "slower" pupils to be placed in smaller classes.

Another large scale study in England worthy of mention is that of Morris (1959) investigating the school factors associated with good and bad reading. She found from her sample of 7,400 children aged seven to eleven in 51 schools that, among other interesting results, "schools with an unfavourable pupil/teacher ratio returned higher scores on the whole than those with small classes!" She qualifies this finding, however, by adding that "large classes are associated with large schools and other circumstances tending to raise scores".

The National Survey carried out for the Plowden Report by Peaker (1967) included a measure of class size among the other home, school and teacher variables studied. The data were obtained from representative samples of children attending primary schools in England, and after extensive regression analyses, Peaker concluded, "Although we found, as other inquiries have done, an association between better work and larger classes we also found that there were invariably other favourable circumstances, associated with the larger classes, to account for their apparent superiority".

The largest survey that has dealt with this problem is undoubtedly that carried out by the International Association for the Evaluation of Educational Achievement (IEA). In the Mathematics Study (Husén, et al, 1967) each student in each of the twelve participating countries was asked to report the size of his mathematics class, and this was related to his performance on the specially devised mathematics tests. Two types of analyses were performed with the groups at the 13 - 14

year old level and again with two pre-university groups. The average size of class in each separate group studied in each country was calculated and rank order correlations produced with the average mathematics score. These were positive at the thirteen year old level (.29 and .41) and negative at the pre-university level (-.41 and -.23). In other words, students in countries with larger classes scored higher at the 13 year old level, but the reverse was true at the pre-university level.

In the second analysis, again for each group tested, three sizes of class were defined; at the younger level, small meant less than 25, medium meant 25 - 34, and large, 35 and over; at the older level, small meant 19 or less, medium, 20 - 34, and large, 25 or over. Separate data were produced for different types of school - comprehensive, selective academic, selective vocational, and those taking the remainder. In general the results showed that size of class was not related to mathematical achievement, but some significant differences were found, generally in favour of large classes with the 13 year olds and in favour of small classes with the pre-university groups - echoing the results of the between - country analysis. To explain the findings at the lower level, it was suggested that, within an education system, where pressure was made to maintain a uniform class size, backward classes were reduced in size to assist progress, and good teachers were given larger classes because they were more able to cope with them. At the higher level, there would seem to be a tendency for the more advanced students to have smaller classes. The further comment was made that the results were in keeping with the suggestion that a reduction in class size may operate to advantage only when the size is reduced to twenty or fewer; to the average teacher, a class of 25 may mean much the same as a class of 35 or 45, if the same teaching methods were being used.

In the national analysis of the same data for England, Pidgeon (1967) confirmed the international findings "that achievement is either not related to class size, or is higher with larger classes". Additional multiple regression analyses were also carried out, and significant regression coefficients were found for two of the populations studied - the thirteen year olds and the selective group of 16 year old secondary pupils taking the G.C.E. 'O' Level examination. The variables partialled out included Father's Occupation and Education and a number of school and teacher factors, but not any measure of the general ability of the pupils or parental aspiration or literacy in the home. It was concluded, therefore, that the positive relationship between performance and large classes was an artifact of the system of streaming, whereby higher streams tended to have more pupils per class than lower streams. This practice was not followed at the

pre-university level because of the highly selective nature of the students, and with generally small classes (average size 12 pupils) no significant relationships were found.

Recently Lindsey has reanalysed the IEA mathematics data for one of the 13 - 14 year old groups from 6 countries (Lindsey, 1973). He used the technique of analysing response surfaces (Lindsey, 1972) to discover the optimum combination of hours of instruction and class size with respect to mathematics score, when influenced by three other variables - the social class, the school programme followed and the sex of the students. His analyses revealed interesting patterns of relationships among the six variables studied, many of which were consistent across all six countries. On class size, his findings for this age level generally supported the original results, but he adds the warning, "Students could be in large classes in the vocational and general programmes because of their higher scores as easily as the converse; or class size and hours of instruction may be dependent on some other variable not included, such as quality of the school ... One cannot conclude that large classes cause higher scores ... and thus that enlarging existing classes will produce more students with higher achievement". He concludes by stressing that studies using survey data may lead to the formation of casual hypotheses, but these can only be tested by rigorous experimental research.

At the time of writing, the first reports of the more recent IEA studies have just been published. (Coomber & Keeves, 1973, Purves, 1973 & Thorndike, 1973). These covered the subjects of Science, Reading Comprehension and Literature, with further reports on French and English as foreign languages and Civic Education to follow, together with additional volumes covering general and technical aspects. Some data showing the wide variations which exist across countries with respect to the size of their teaching groups, as measured by pupil/teacher ratios, have been reported (Education, 1973) and it would appear(1) that, in most countries and in most subjects tested, there is little relationship between class size and pupil achievement. In some instances significant simple correlations have appeared, both positive and negative, but after partialling out other important variables, these have been reduced to near zero. The simple correlations in the English data, for example, between pupil/teacher ratio and Achievement in Science, Reading Comprehension and Literature for the 14 to 15 year olds, were -.30, -.28 and -.35 respectively. After a School Handicap Score (a measure derived from variables in the home backgrounds of the pupils including Father's Occupation and Education, number of books in the home, etc.) a measure of the type of school

1) Personal Communication from Dr. Bruce Choppin, NFER, Slough, England.

attended, and a measure of the Type of Programme followed in the school had been partialled out, the partial correlations became, .00, .01 and -.05 respectively.

In summary, the results of the large-scale surveys have not, for the most part, offered any support for the general belief of teachers and others that higher pupil performance will accompany smaller classes. On the other hand, although some results have indicated higher performance from pupils in larger classes, when the analyses have taken into account other correlated variables, this superiority seems to disappear. What does emerge quite clearly from this kind of research is that the problem is far more complex than appears at first sight, and there are quite clearly a number of other factors which must be taken into account if its complexities are to be unravelled. Moreover, if casual hypotheses are suggested from the data examined, only sound experimental research will allow these to be fully tested.

The question of the criteria employed in various research studies has already been mentioned. Vincent (1969) gives five criteria which have been used in different studies:

i) cost and related expediences;
ii) working conditions, such as teacher load;
iii) the opinions of teachers and others;
iv) pupil achievement;
v) class activities made possible or prohibited by a particular class size.

Most studies, certainly those of a survey nature, have employed the fourth of these - pupil achievement - probably since it is the most defensible and is one of the easiest to measure reliably by the use of standardised tests. The results of a survey in which the general quality of the educational process in the classroom was used as the criterion have been reported by Olsen (1971). A specifically designed "structured observation guide" was used by trained observers to assess classroom processes on four criteria: individualisation, interpersonal regard, group activity and creativity. The data obtained were converted into a "highly reliable and valid" quantitative score, and results were gathered from over 18,500 classrooms roughly split between elementary and secondary schools. Probability sampling was not used, hence the results are only directly generalisable to the population tested, although this was described as "quite representative" of American education. Many internal classroom variables were related to the criterion in the statistical analyses carried out, and, with class size, a near perfect linear relationship for both elementary and secondary classrooms was demonstrated with the criterion - smaller classes producing significantly higher scores than large ones, from those containing under five pupils to those with over 50. If they do little else, the results of this study highlight even more strongly

the importance of other classroom variables which intervene in the apparently simple relationship between class size and pupil achievement. Assuming that if the criterion had been straight pupil achievement, the results would have differed little from those obtained in other surveys, the implications are that the correlation between achievement and "quality" in the classrooms participating in this study was either zero or negative. It would be instructive if further studies using this same quality criterion could be made with probability samples from which measures of achievement were also obtained.

It must be noted, however, that the four separate criteria which made up the Indicators of Quality used in this study - individualisation, interpersonal regard, group activity and creativity - are all aspects of teacher behaviour. Indeed they form some of the most important of the intervening variables which have been ignored in previous research work. In other studies aimed to predict pupil performance, measures of these qualities might well appear as independent variables, and it was only to be expected in the Olsen study that teachers in small classes were more likely to be rated as attempting individualisation and employing group activities, if not also aiming for more creative work and having a greater interpersonal regard for their pupils, than those in large classes. In fact, the independent variable which explained most of the criterion variance in the study was the "style of educational activity", with small group work and individual work gaining the highest scores - it would indeed be surprising if this were not the case. There is, therefore, no real discrepancy between the results of this study and the other researches that have been reported. The importance of the study lies in the fact that it has focused attention on some of the major issues in the class-size controversy and these, together with a number of other factors, must now be discussed.

IV. FACTORS WHICH INTERVENE IN THE RELATIONSHIP BETWEEN CLASS SIZE AND PUPIL PERFORMANCE

i) Homogeneity of Classes

The question of the degree to which the students in a given class form a homogeneous ability group would seem to be very relevant to the numbers capable of being taught by a single teacher. When the emphasis is placed on teaching it would seem to follow that just as the teacher's load is increased with larger classes, so will it be increased the more the students deviate in ability from the class average. Put simply, it could be argued that if all the students in a given class were at about the same level of ability, the class could contain quite large numbers without any lowering of teaching efficiency, whereas, if the ability range was large, the efficiency

would fall unless numbers were kept reasonably small. This argument, however, received no support from the study by Marklund (1962) who was specifically concerned with investigating the way in which class size and homogeneity affected student performance. His results were negative, in the sense that they demonstrated not only that class size had no significant bearing on academic achievement, but that the absence of a relationship persisted even when such factors as intelligence level, homogeneity of intelligence and social pattern were controlled. Marklund, however, drew attention to the fact that the theorizing which underlined his own and other research into class size and homogeneity was based on erroneous premises: "They pay heed only to what teachers impart and not to what pupils learn". He points out that if the "teacher's method of instruction and the pupil's methods of study" became the important determinants of learning, then "class size and homogeneity acquire another and less self-evident character". The question of the importance of methods in this context was also stressed by Baker Lunn (1970) who reported in her study of streaming in English primary schools that teachers blamed large classes for preventing the introduction of "progressive" methods, such as non-streaming, and she quotes one teacher as saying "you can't teach a large class other than by formal methods".

ii) Level of Education

In most countries considerable differences are to be found in the size of class according to whether students are at the primary (elementary), secondary or tertiary level of education. For the most part the differences are a result of deliberate policy, but opposing views are often held as to whether, with pupils up to age 15 or 16 at least, younger children should be in smaller or larger classes. In most American states and in Sweden, for example, older pupils are expected to be in the larger classes - the statutory maximum in Sweden, for example, being 25 in grades 1 - 3, and 30 in grades 4 - 9 (Orring, 1962). In England, where classes are generally larger than most other European countries, the reverse is the case - 40 in primary schools up to age 11, and 30 in secondary schools. The Plowden Report (Central Advisory Committee for Education, 1967) found some support among teachers for the view that infant classes (ages 5 - 7) should be smaller than junior (7 - 11), although this was not the observed practice.

With students at the top of the secondary school however, there appears to be fairly close agreement. The average size of class among pre-university students, reported in the IEA Mathematics Study (Husén et al. 1967) was considerably smaller than with younger age groups among all participating countries except for Japan where it was the same. At the tertiary level, it would seem that class sizes are generally even smaller with student/staff ratios around

10 - 15 (OECD, 1971). A variety of teaching methods are employed at this level, from direct lecturing to discussions and tutoring (see, Powell 1970), and since there can be a very large range in instruction group size, it might be supposed that the influence of size per se on achievement would be revealed in research studies. For the most part, however, little difference in student achievement has been reported (Macomber & Siegal, 1957, Siegal et al. 1959 and 1968). Similar results from studies carried out in medical education have been reported by Walton (1970). If there have been no differences in the achievement of different sized groups at this level of education, there have been differences reported in students' preferences for smaller groups (Cottrell, 1962, De Cecco, 1964) and in their attitudes (Sanazaro, 1966, Walton, 1967). Both these latter studies suggested that it was factors such as "different learning models", and "greater association with teachers" that were important if smaller group instruction was to produce higher achievement. In the study by Simmons (1959), reported in Vincent (1969), different methods were used to suit the size of the small and large groups being compared, and the results then showed significant differences in achievement by the smaller classes.

The consideration of the different size of instruction groups at different levels of education, while emphasizing once again the importance of the method used in relation to size, reveals an interesting phenomenon. With a few exceptions at the primary and secondary level, the general tendency in most countries is for a policy of making classes smaller the older students get, while the tendency in curriculum reform in those countries where it is being undertaken is towards the development of different methods and approaches which require classes to be smaller for the younger students.

iii) Space Provided and Subject Studied

Not unconnected with the point raised in the previous section is the question of the amount of space provided for any given class. Fleming (1959) makes the obvious point that little children require less space than the same number of adolescents or adults - a purely economic factor which may have contributed to the decision to put a greater number of younger children into standard sized classrooms. At the secondary level, schools tend to be provided with laboratories of various kinds as well as other specialised teaching rooms, and because of the nature of the subject and the kind of instruction required, these are generally equipped to cope with smaller numbers than the conventional classroom. This offers yet another reason why, in most countries, class size in secondary schools tends to be smaller than in primary and at the same time provides a further illustration of the necessary interaction between the subject studied and class size.

Economic factors undoubtedly enter into the decision of what size a classroom should be, and what additional space could or should be provided. It is only in recent years, in the United States, England, Sweden and one or two other countries that the importance of space for primary or elementary children has been recognised. Certainly in the many older schools (built in the first half of the 20th century or before) still in use, there is a clear relationship between class size and school size. The Plowden Report in England refers to the fact that small classes tend to be found in small schools and that such schools tend to be either in rural areas or in the older parts of towns where bad social conditions "may have a cumulative effect on children". The Report notes further that in such small schools, classes may contain children of several different ages. All these factors, it is suggested, offer possible explanations why survey studies have not revealed superior achievement from the smaller classes.

Reference was made above to the fact that some school subjects require special rooms and equipment and that these needs influence the number of students that can be coped with in a single class. (Thouless, 1969) refers to the fact that the few instances where significant correlations have been reported in research between teaching success and class size point to the possibility that the optimal size of class may depend in part on what was being taught. He adds, however, that "what is the optimal size of class for a particular teaching task remains a problem for research".

iv) Social Class

The possibility of relationship between social class and class size has not received a great deal of attention in the literature - perhaps for sound and obvious reasons. Goodacre's survey of reading in infant classes in England (Goodacre, 1967) demonstrated that there were significant differences in the number of pupils per teacher according to the social class of the area from which her schools were drawn. Schools in densely residential areas with mainly lower working class and working class children had larger Pupil/Teacher ratios (35.2) than those from predominantly middle class areas (31.7). The study by Lindsey using the IEA Mathematics data already referred to (Lindsey, 1973) demonstrated significant interactions between social class and the two school variables considered - class size and hours of instruction - but only for selected students following academic programmes. For the remaining students in vocational and general programmes, their mean achievement scores depended "on social class in an additive manner in relation to the two school variables". Lindsey concludes from his analyses that rather than looking to the quality of the school as a possible intervening variable in the relationship between achievement and class size, it might be more fruitful "to investigate differences in the interaction between children

from various social classes in the school". This is possibly a factor which should not be ignored, if only because it draws attention to the different values and expectations which pupils and teachers (see Goodacre, 1968) bring to the interactive situation of a school classroom.

v) Ancillary Assistance in the Classroom

Reference has already been made to the fact that the general resources of an education system may be deployed either by increasing the number of trained teachers - and thus reducing class size - or by providing other non-teaching personnel, such as administrators, guidance counsellors, librarians, etc., keeping class size relatively constant. The use of a measure such as "numerical staff adequacy" as suggested by McKenna (1965) to replace class size or Pupil/Teacher ratio assumes, of course, that the total efficiency of an education system would be about the same in either of the two situations. There does not appear to exist any empirical research evidence to support this contention, and while few teachers would denigrate the importance of auxiliary personnel operating, for the most part, outside the classroom, most would be ready to support the argument that if the number of teachers could not be increased in order to reduce class size, an improvement in efficiency might be achieved by seeking alternative methods of utilizing the capabilities of teachers, or by supplying ancillary help within the classroom.

Many different schemes have been employed to group pupils so that the maximum advantage is taken of the individual capabilities of teachers within a school. These are well described by Yates (1966) and include homogeneous ability grouping; planned heterogeneous grouping, including the ungraded school; multi-grade and multi-age grouping; planned flexible grouping, including the Trump plan, the Dual-progress plan, team teaching and the Bush-Allen flexible schedule plan using computers; teachability grouping, advocated by Thelen (1967); and simple intra-class grouping or the subdivision of a class unit for specific activities and purposes. All these schemes, and others, are aimed to help teachers cope more efficiently with large classes, and many allow the utilization of teaching and learning techniques and methods that would not otherwise be possible.

The alternative policy of introducing ancillary aides into the classroom deserves some attention. The study of the primary teacher's day in England (Hilsum and Cane, 1971) revealed that "only about 43 per cent of the (teacher's) time was, on average allocated to lesson instruction as such". While a further 20 per cent was assigned to preparing and organising pupils' work, and 10 per cent to "general supervision", much of the remainder was spent on non-professional activities such as supervising children's movements around the school and carrying out mechanical and clerical tasks.

The likelihood that teaching efficiency would improve, especially in schools with large classes, if additional "helpers" were provided to relieve the teacher of these non-professional tasks would seem to be very high. It would not appear, however, that as yet there is any empirical evidence available to show that teaching efficiency is in fact improved with such help.

Classroom assistance for teachers need not be restricted to non-professional activities. The use of aides, trained to help fully qualified teachers is an accepted part of the nursery and kindergarten scene in England and many other countries, and the Plowden Report makes specific recommendations that trained teacher aides "should be employed in primary schools under the supervision of qualified teachers to provide them with help in the classroom". (Central Advisory Council for Education 1967, page 337.) This help in both infant (ages 5 - 7) and junior (ages 7 - 11) schools would extend well beyond the "non-professional" activities described by Hilsum and Cane, and would basically consist of an "extra pair of hands" for the teacher, supplying encouragement and help to children in their play, reading and other learning activities.

The possibility of schools enlisting the voluntary help of parents and other members of the community was also envisaged by the Plowden Committee - provided always that "such help is ... under the strict control of the head teacher". The use of pupils to help other pupils to learn has been pioneered in the United States by Thelen (1968), and this and other strategies for providing appropriate learning resources are discussed under the concept of Mastery Learning (Bloom 1968, Block 1970). Ancillary help, particularly in the form of trained adult aides to assist in the teaching/learning process is only possible in classrooms that have moved from "chalk and talk" methods and have adopted alternative techniques and approaches. Opposition, however, to the use of only partially trained personnel operating alongside qualified teachers in the classroom is not uncommon - the argument being that, apart from preserving the professional status of teachers, the efficiency of the teaching is bound to suffer and consequently the standards of pupil achievement to fall. Such opposition fails to recognise that the use of ancillary help is not intended in straight class teaching situations, but only in those schools and classrooms where the emphasis has changed from teaching to learning. IMU experience in Sweden, for example, has demonstrated that two specialist teachers and one assistant with lower qualifications could replace three specialist teachers, without loss of efficiency but with a cost saving, provided new programmed and individualised materials were employed (L.C. Taylor, 1970).

vi) Teacher Behaviour and Method

It might seem that the two topics under this heading should be treated separately. An examination of either case, however, reveals the immediate impossibility of the task. Discussions of teaching methods necessarily involve descriptions of what teachers do, or are expected to do, both inside and outside the classroom, and to talk of different teacher behaviour is, in nearly all instances, to offer descriptions of the alternative methods and approaches which can be employed.

Although in the past perhaps too much attention has been focused on the teaching process, it is now recognised that it is the learning process that is of major concern. The fact that a teacher teaches, is certainly no proof that his pupils will learn. That teachers vary enormously in their ability to teach is only another way of saying that they vary greatly in the methods and approaches they employ. Equally it must be recognised that pupils differ not only in the rate at which they are able to respond to "instruction", but also in the kind of "instruction" to which they are most receptive. Moreover, the interaction between pupils and teachers must not be overlooked - pupils respond differently to different teachers and "the quality of their learning varies with the different approaches which can be used by the same teacher" (Fleming, 1959, p. 46).

The close relationship between possible methods that can be used by teachers and class size has been implicit in much of what has already been said here, and has certainly been referred to by other writers. There are two aspects, however, which need to be stressed; these are that different methods are best suited to different sized groups, and that the newer methods and approaches which emphasize learning rather than teaching, necessarily require small classes.

As an illustration of the first point, it may be noted that the lecture method at college level can be used with seemingly equal efficiency irrespective of the size of the class (Robertson, 1959), although Thouless suggests that it may be easier for a university lecturer to lecture to a group of 200 students than to 10, "because with the larger number there may be no individual demands made on his attention" (Thouless, 1971, page 55). He points out, however, that the methods that can be used with large groups must be such as to demand little individual interaction between teacher and student.

Even at primary and secondary levels, large groups of 100 or more are quite satisfactory where pupils, for example, are required to watch films or television, or to listen to illustrated talks. Quite large classes of 50 or more are also possible if the method employed is one of direct class teaching, with the teacher talking most of the time and the pupils passively listening. As soon as pupil participation is required, however, smaller classes become necessary, and with

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methods demanding close and continual interaction between individual pupils and their teacher, the classes must become smaller to remain efficient. Burstall, for example, found that good progress in learning oral French was associated with "stable classes of reasonable size" and "establishing good teacher/pupil relationships", while among the factors inimical to progress was "a class of abnormal size!" (Burstall, 1970, p. 83). She quotes the comment of a primary Head on the impossibility of "taking an oral approach with large classes of 40+" (ibid, p. 61), and the plea of a secondary school pupil for smaller classes where "we would be able to get on with our French better and enjoy it more". (ibid, p. 108).

The methods that can be used effectively with relatively large groups (say 50 or more) are more or less restricted to lectures or the use of direct teaching methods, involving little or no pupil participation. It is only when classes are much smaller [illegible] than 30 or 40 - that other techniques and approaches become possible, although the Plowden Report points to the fact that "much depends on the skill of the individual teacher"; some even find "big classes a challenge to their determination and professional competence", and are able to develop "individual work with classes of 50" (op. cit. p. 282). Such teachers are exceptional, however, and the general level of skill and competence of the vast majority is much lower.

Teachers and methods are inextricably mixed, and by no means all those confronted with even quite small classes are capable of taking advantage of the fact.

In an interesting study, Oakley (1970) investigated the possibility of variations occurring in observable teacher behaviour when teachers were faced with classes of widely varying sizes, and discovered that changes in class size did not lead to dramatic changes in the teachers' classroom behaviour. Interestingly enough, he found that "teacher inclination, the teacher's own style" was by far the most important determinant of what occurs in the classroom. Another study by McKenna and Pugh (1964) demonstrated that teachers with small classes did not automatically adopt methods appropriately suited to small numbers and while more individualised work was found, much of the instruction was still mass oriented. This finding was confirmed by Danowski (1965) who discovered that only about half of his sample of 132 teachers with small classes of 20 or less took advantage of the opportunity afforded them and employed individualised teaching methods.

Research findings such as these should occasion little surprise. In most countries of the world the traditional view still predominates that "the teacher instructs all the pupils of a class in the same subject-matter at the same time and in the same way" /OECD, 1971(a)/. In some countries, chiefly in Sweden, the United States

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and England, changes in this traditional view have been occurring over the past 20 or 30 years, and both the pace of change and the spread of the new ideas to other countries have recently increased very much. There is every indication that these trends will continue in the future [Svenson & Bjorklund, 1966 & OECD, 1971(b)] despite some reported resistance especially on the part of secondary school teachers (Stellwag, 1963, Marklund, 1963, Husen & Boalt, 1968). It is probably no coincidence that the major educational reforms being referred to here, at least in England, started with the teachers of the very young just beginning school, and have progressively spread upwards to those taking older children (Central Advisory Council for Education, 1967).

It is not proposed here to discuss the nature of these educational reforms, except to note (a) that they entail the employment of different forms of school and classroom organisation as well as changes in the techniques, methods and approaches, and (b) they also demand a considerable change both in the attitudes and in the basic educational philosophy and beliefs of teachers (Pidgeon, 1971). This latter point is important; attempts by teachers to change their methods to conform to the requirements of "modern theories of education", unaccompanied by appropriate attitudinal changes could well lead not to any improvement in efficiency, but, indeed, to a fall in standards. A teacher is always most successful pursuing the methods and approaches that he believes are right for him.

As has already been stated, the new forms of classroom organisation and the changed methods require relatively small classes in order to be effective. It does not follow from this, however, that because a teacher has a small class he will necessarily depart from the traditional type of classroom organisation consisting of rows of desks and static children, or that even if he does adopt an informal setting he will necessarily adapt his behaviour to put into practice the changed philosophical ideals that the protagonists of progressive and informal education really require. An interesting study of the organisation of primary school classes in England by Bealing (1972) showed that "despite the relatively informal classroom layouts adopted by the vast majority of teachers there was so much evidence of tight teacher control over such matters as where children sit and move that it seems highly doubtful that there (was) much opportunity for children to choose or organise their own activities in most classrooms". Many schools may claim that they are using "progressive and informal" approaches, which utilize intrinsic as opposed to extrinsic motivation and place due emphasis on the learning process, when, in reality, they are continuing to teach in the way they themselves were taught and indeed were trained to teach. Words like "individualisation", "open plan", "integrated day", "independent

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learning", become no more than catch phrases, quite empty of any practical meaning. Moran (1971) found, for example, that teachers used the term "integrated day" to refer to many widely different forms of classroom organisation, which in many instances allowed children no more freedom of choice for independent learning than could be found in the most traditional of classrooms.

It follows from the foregoing that the consideration of pupil achievement in relation to class size can be misleading if other factors - particularly those concerned with what actually happens in the classroom - are not taken fully into account and that there is a consistency about what does happen in the classroom which is relatively independent both of the size of the class and of whatever claims are made concerning the adoption of new progressive and informal approaches. Improvements in pupil achievement will only follow from a reduction in class size if the methods, etc., are changed and if these changes are accompanied by appropriate changes in the attitudes and beliefs of the teachers concerned.

V. REASONS FOR LACK OF POSITIVE RESEARCH EVIDENCE FAVOURING SMALL CLASSES

This review and analysis of past research work on class size and pupil achievement has revealed that this seemingly simple relationship is, in fact, of far greater complexity than was originally supposed. Common sense judgement clearly suggests that smaller classes should lead to improved pupil achievement, yet direct research evidence has offered no support - indeed in many instances it has even demonstrated the opposite. A number of possible reasons for this contradiction can now be stated although not all, of course, will apply to every research study.

i) The use of traditional teaching methods in which the teacher passively imparts knowledge to whole classes would seem to be equally effective, within fairly wide limits, with classes of different sizes.

ii) With primary or elementary pupils, a great many of the studies reported were carried out over five or ten years ago when few of the schools concerned had attempted any variation from the "traditional" pattern of class teaching.

iii) Even recent studies with students in secondary schools and colleges have not appreciated the fact that traditional teaching methods have tended to persist even with school subjects which normally demand smaller groups for practical and laboratory work.

iv) The tendency for lower ability students to be placed in smaller classes, and vice versa, present in many studies, has inevitably resulted in zero-order correlations between achievement and class size being positive. The failure to partial out variables associated with instructional techniques and methods in subsequent analyses may have contributed to the reason why the partial coefficients produced have rarely, if ever, become negative.

v) Large classes often encourage teachers to concentrate on a narrow curriculum, which may lead to higher levels of achievement in the limited range of subjects which are usually the most amenable to research measurement, thus giving a false picture of the influence of class size on children's general education.

vi) Even where researches have used quite small classes, the teachers concerned have, in general, not taken advantage of the fact and have continued to employ the same mass methods of instruction used in much larger classes.

vii) Again, even where teachers have seemingly adopted the appropriate organisation and methods for use with smaller classes. their attitudes and expectations for higher levels of performance have not changed, so that few differences in achievement compared with pupils in larger classes have occurred.

For these and probably many other reasons, research has not confirmed the common sense view that smaller classes must inevitably lead to higher standards of achievement. If research has apparently failed to confirm expectations, however, it has certainly clarified the issues concerned to the extent that it has revealed the naivety of the original expectations. The relationship between class size and achievement is much more complex than was originally conceived and, if the importance of the teacher's role - both with regard to attitudes and to classroom practices - now seems obvious to the sophisticated educationalist, it must be remembered that not only have educationally advanced countries only recently become aware of this aspect of the teaching-learning process, but that in many countries the full implications of it have hardly yet begun to be appreciated.

VI. CONCLUSIONS

The main conclusion to be drawn from research in this area is not that class size does not matter, but that both teachers and administrators must recognise that there is no universally "right" size for any class. The optimum size of a class will depend far more

upon the philosophical basis accepted for the teaching-learning process than upon any direct practical consideration such as the age of the student or the subject being studied. These factors only become important if the emphasis remains upon class teaching, using techniques of mass instruction. If the predominant philosophy of an education system focuses on this kind of approach, then the results of research would indicate that a reduction in class size - from around the 30-40 range - is unlikely to lead to any improvement in pupil achievement. In practice, of course, as so many research studies have demonstrated, the vast majority of teachers still accept this philosophy - some even support traditional methods and techniques very strongly (Froom, 1970). Strangely enough, it has often been those traditionally-minded teachers who have been most vociferous in demanding smaller classes.

The research reviewed, however, has made it clear that small classes are only advantageous when teachers adapt their approach to suit the new conditions, and adopt methods involving more independent learning and greater pupil/teacher interaction. Methods of mass instruction may still have a place in an education system, but the importance of small classes lies in the acceptance of the fact that the end product of the educational process is the learning achieved by the individual pupil and not the ability of the teacher to impart any knowledge he may possess.

Again, research has indicated that teachers do not automatically make changes in their methods given a small class and, hence, appropriate training, both at the initial level and in-service, becomes a necessity. Training, involving the use of different methods and approaches to pupil learning, however, may not have the desired effect if it is not also accompanied by serious attempts to change the students' and teachers' attitudes and beliefs about the purposes of the educative process. In practical terms, one of the major differences between traditional methods, with their emphasis on teaching and the newer approaches concerned with individual learning, is the move away from dependence mainly upon academic achievement and a general broadening of the curriculum to include a greater involvement with the affective side of learning - the development of individual interests and the growth of desirable pupil attitudes towards society and the role that their own and other people's education plays in this. For students and teachers whose previous social and educational experience has been conditioned by more traditional views, such attitudinal changes are not easy to bring about. Their importance, however, cannot be questioned.

A reduction in class size would seem inevitably to lead to an increase in the administrative costs of running an education system, and it might be argued that this is the price that has to be paid for

introducing desirable improvements. It should be noted, however, that in nearly all countries the increasing importance of education has been recognised by a steady rise in the past few years in the proportion of the Gross National Product devoted to it, and, similarly, despite the negative results from research, average class size has in most instances been steadily declining. To suggest, therefore, that both these trends should continue is not to make any revolutionary proposition.

There are, however, other factors that need to be entered into this equation. In the first place, as was stated earlier from the Plowden Report, a great deal depends upon the skill of the teacher, and, hence, increasing the quality of teachers - and this would include improving the methods of training referred to above - would also be instrumental in bringing about the desired result without actually lowering average class size very much. A further idea, of course, is the extended use of teacher aides. If the efficiency of a given number of highly trained teachers is unimpaired by replacing a proportion of them with assistants having lower qualifications at lower cost, the savings could be used to help reduce the overall class size. And there are many other schemes that have been explored for utilising the teaching force more efficiently - ideas like team teaching with its many variations, pupils helping other pupils, and the voluntary involvement of parents, especially with the very young. All such ideas need to be investigated further, not by survey, but by carefully planned experimental research.

Some of the changes in methods implied in the analysis given here might lead to the suggestion that the very concept of the class - and hence of its size - is being challenged. Even if this is true, the pathway to its disappearance is a very long one. Without doubt, for a great many years yet, there will be teachers who will continue to exercise authority over a class, and "teach" it in what has been referred to here as the "traditional" way. For them, class size will always remain a problem, although one which research has shown to be devoid of any reality. Provided, however, that the basic aims of any given education system continue to move in the direction of the reforms that are now beginning to spread in many countries, and increasing attention is paid to training teachers in the approaches and techniques required to meet those aims, then the concept of a class and the problems associated with its size, may indeed in time cease to exist.

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